Virginia Wildlife

NOVEMBER 1965

VOLUME XXVI/ NUMBER 11

20 CENTS

Virginia Wildlife

Dedicated to the Conservation of Virginia's Wildlife and Related Natural Resources and to the Betterment of Outdoor Recreation in Virginia

Published by VIRGINIA COMMISSION OF GAME AND INLAND FISHERIES, *Richmond, Virginia 23213*

COMMONWEALTH OF VIRGINIA

ALBERTIS S. HARRISON, JR., Governor

Commission of Game and Inland Fisheries

COMMISSIONERS

Dr. E. C. Nettles, *Chairman* . . . . Wakefield
I. T. Walke, Jr., *Vice-chairman* . . . . Norfolk
J. C. Aaron . . . . . Martinsville
H. G. Bauserman, Jr. . . . . Arlington
Richard F. Beirne, III . . . . . Covington
Custis L. Coleman, M.D. . . . . Richmond
A. Ree Ellis . . . . . Waynesboro
R. G. Gunter . . . . . Abingdon
J. Cargill Johnson . . . . . Newport News
G. Richard Thompson . . . . . Marshall

ADMINISTRATIVE OFFICERS

Chester F. Phelps, *Executive Director*

Richard H. Cross, Jr. . . . *Chief, Game Division*
Robert G. Martin . . . . . *Chief, Fish Division*
Lillian B. Layne . . . . *Chief, Fiscal Division*
James F. McInteer, Jr. . *Chief, Education Division*
John H. McLaughlin . *Chief, Law Enforcement Div.*

PUBLICATION OFFICE: Commission of Game and Inland Fisheries, 7 N. Second St., Richmond, Virginia

James F. McInteer, Jr. . . . . *Editor*
Ann E. Pilcher . . . . . *Editorial Assistant*
Leon G. Kesteloo . . . . . *Photographer*
Harry L. Gillam . . . . . *Circulation*

NOVEMBER
Volume XXVI/No. 11

IN THIS ISSUE **PAGE**

Guest Editorial: Bugging the Litterbug 3
Letters 3
Sustained Yield Deer Herd Management (If You Want It) 4
Big Game Kill 6
The Duck Debate 7
Don't Fire Until - - - ! 8
Warm Tips for Cool Campers 10
The Gray Fox 12
Conservationgram 13
Boating Access in Southeastern Virginia 14
Gabions for Stream Improvement 16
The Heart of the Hunter 17
For the Thrifty Trophy Collector 18
Outlaw Roundup on Little Creek 20
One Shot 21
Bird of the Month: Greater Snow Goose 23
Drumming Log 24
Youth Afield 25
On the Waterfront 26
Governor's Letter on Conservation Week 27
Gray Fox (Kodachrome) 28

COVER: Call them blackheads, blacknecks, bluebills, scaup, or what you will, they fly fast, decoy well (sometimes!), and usually are welcome upon the dining table of the lucky duck hunter. There is a special "bonus" bag limit on scaup this year in a specially designated area of the Chesapeake Bay. See page 8 for details. Color photograph by Karl Maslowski.

SUBSCRIPTIONS: One year, $1.50; three years, $3.50. Give check or money order, made payable to the Treasurer of Virginia, to local game commission employee or send to Commission of Game and Inland Fisheries. P. O. Box 1642. Richmond, Virginia 23213.

Virginia Wildlife is published monthly at Richmond, Virginia, by the Commission of Game and Inland Fisheries, 7 North Second Street. All magazine subscriptions, change of address notices, and inquiries should be sent to Box 1642, Richmond, Va. 23213. The editorial office gratefully receives for publication news items, articles, photographs, and sketches of good quality which deal with Virginia's soils, water, forests, and wildlife. The Commission assumes no responsibility for unsolicited manuscripts and illustrative material. Credit is given on material published. Permission to reprint text material is granted provided credit is given the Virginia Commission of Game and Inland Fisheries and Virginia Wildlife. Clearances must be made with photographers or artists to reproduce illustrations.

Second-class postage paid at Richmond, Va.

GUEST EDITORIAL

"Bugging" the Litterbug

IT is encouraging to note that someone is getting serious about the problem of litter. Now, if others follow suit, perhaps we can halt the senseless trend toward making garbage dumps of our highways and public lands.

U. S. Commissioner Guy O. Farley, holding court in Staunton, has made it clear that litterbugging in George Washington National Forest will not be tolerated. He is to be commended for taking a firm stand on the disgraceful practice, as are those officers in the field who remain alert to such infractions.

In two recent actions, Commissioner Farley: (1) ordered a Waynesboro man who was convicted of dumping trash in the national forest to clean up the debris under supervision of a Forest Service official; and (2) gave a 17-year-old litterbug the choice of working eight days picking up trash or spending 30 days in jail. In both cases, fines and suspended sentences also were meted out.

It is too bad that many Americans will not respond to sensible appeals for maintaining the beauty of our roadways, parks and other public places. A lack of concern for one's fellow man, plus large doses of thoughtlessness and carelessness, can be blamed for the atrocious mess we see all too often.

If it is going to take threats, fines and jail sentences to curb the litterbugs—and it obviously is—then these measures should by all means be utilized.

Commissioner Farley and the men responsible to his court have set the example. Similar vigilance and action by city and state officials could further reduce the litter menace.

As difficult as present laws may be to enforce, they *are* on the books and they should be brought into full play against those who would destroy the natural beauty of land that belongs to all of us.

Reprinted by permission from the Waynesboro *News Virginian.*

LETTERS

It Pays to Advertise

(In our September "Letters" column we printed Mr. Harwood's offer to send his complete set of Virginia Wildlife copies, dating to 1952, to anyone willing to pay shipping charges.—Ed.)

I must send a few lines to tell of my experiences regarding those back numbers of *Wildlife.*

On Sunday, September 5, I received a phone call from Mr. Ralph Meredith of Blacksburg, Va., asking for the copies. I was glad someone wanted them, and agreed to ship them.

Including his call, I have received nine phone messages. They came in this order: Blacksburg, Richmond, Arlington, Richmond, Oakville, Falls Church, Washington, D. C., Wayside, N. J., Chambersburg, Pa.

Letters came in this order: Virginia Historical Society, Richmond, Ray Wolfe, Staunton, Va., Mrs. George Anthony, Burlington, N. C., Alec Carter, Bedford, Va., Carroll D. Davis, Lynchburg, Va., Oliver W. Jones, Falls Church, Va., Dale F. Jones, Ashland, Va., Shenandoah Natural History Association, Luray, Va., W. H. Welch, Jr., Alexandria, Va., Leslie S. Napier, Fairfax, Va. and Katherine Watson, Aberdeen, Md. The last two asked for the copies to use in school.

I have been amazed at the endless demand for the copies. I only wish I could supply them all with the issues. It is an evidence of the great value set upon *Virginia Wildlife* by so many. I wonder if the calls will ever end! They come every day.

All this makes me wonder if someone else besides myself has kept back numbers and could supply at least the two historical societies. I was especially grieved to disappoint them. I know they deserve to have the issues for reference and study.

I guess this is all I need to say, but I think you will be interested in this account. The reason I offered my numbers to you is because I am in my 74th year and I felt that someone else might use them longer than I could.

Perhaps a bit of publicity along this line will result in some kind of assistance to those who so much desire back copies.

Frank S. Harwood
Keyport, New Jersey

Perhaps this will help readers who wish to dispose of back issues to contact others who might wish to acquire them.—Ed.

Remember That Photo?

CAN you or your readers refresh my memory and tell me where I saw a lovely picture of bobwhite quail jumping up about a foot or more out of the snow to reach the small blue seeds on a cedar tree? My recollection is that it was in a motion picture, but it might have been just a still photograph.

Fred W. Scott
North Garden, Virginia

Mr. Sportsman: We Can Give You

SUSTAINED YIELD DEER HERD MANAGEMENT

(If You Want It)

By JACK V. GWYNN
Game Research Biologist

TO put it bluntly, we have achieved our deer management goals in major portions of just two regions—those lying west of the Blue Ridge, north and south of the James. In the other four possible management areas—Piedmont, north and south of the James; and Tidewater, north and south of the James—we *either* have less than optimum sustained harvests because we often shoot too many deer over too long a season; *or* we have an overpopulation problem, largely because of conflicting land uses and a failure to control the female segment of the population in certain problem areas.

Cut the season to a reasonable three weeks east of the Blue Ridge, and cut the bag limit to a reasonable one deer per year everywhere, and we can control the size of the herd in each logical management area very precisely by varying *one thing only*—the number of days in which doe deer may be killed. Thus, and perhaps thus only, can our management objectives be attained state-wide.

Virginia's Deer Management Goal

Virginia's deer management goal is simply to provide *optimum and sustained* numbers of deer for maximum public enjoyment. The goal is easy to define but more difficult to achieve. The key words are optimum, sustained, and maximum public enjoyment. Let's take them one at a time.

Optimum Numbers

By *optimum* numbers we mean just the right amount of deer. Not so few that the many recreational pleasures, derived from seeing and hunting whitetails, go largely unfulfilled; nor so many that the herds become unproductive, unhealthy and disease prone while working havoc upon their range and farmers' crops. No matter how pleasing it may be for many of us to see and hunt excess populations of deer, overpopulation today will be followed by underpopulation tomorrow, creating a cyclic pattern instead of a sustained yield. Deer die-offs, which are normally a sign of too many deer with poor quality food, have occurred in several Virginia areas over the past 20 years. The last occurrence in east-central Virginia in 1962 must not be allowed to be repeated.

Optimum numbers means different things to different people in different areas. The orchard owner, the soybean or peanut farmer who suffers excessive deer damage may consider one deer per square mile as overcrowding. The amateur deer hunter who spends one day a year deer hunting believes that 100 deer per square mile is none too many. On his annual hunt day this sportsman must see several deer and shoot at one or two to be convinced that hunting is good. The deer management goal must reflect a reasonable compromise between conflicting points of view.

Sustained Numbers

Sustained numbers means the right number rather than the same number of deer for each area, at all times and not merely as a temporary phenomenon. There has been some misunderstanding of the sustained yield principle. Commonly when we think and talk sustained yield management we are thinking in terms of a very large area or region consisting of many counties. Using the large area concept, we manage for an optimum population size and harvest, making only occasional adjustments over time for large-scale land management changes. This is possible because the many changing conditions that are occurring on the smaller areas that make up the region tend to compensate each other.

U. S. Forest Service photo
Management goal is the right number of deer for maximum public enjoyment in each area every year. Too long a hunting season with too liberal a bag limit stands in the way of success in some areas of the state.

Many of us try to apply the region concept of sustained yield to a small area, and this is where the misunderstanding occurs. Some believe that if we now have 200 deer (currently within carrying capacity of the range) in a specified area (say a hunt club consisting of 2000 acres), then sustained yield means that we will or should have 200 deer on this area for all time. This concept *can* be true, *but only* if the area is being managed primarily for deer.

When deer production is the dominant crop at which the land management program is aimed, then the manager can manipulate the vegetation so that maximum deer food and cover are supplied each year. In most cases deer are not the dominant crop but instead are only a by-product produced on land managed for other crops that are considered more valuable. In these cases the land manager cannot manipulate the vegetation so that maximum deer food

and cover are supplied each year. Instead, the land manager manages the land in such a way as to produce the maximum cash vegetative crop (be it sawtimber or peanut) that he can obtain from this land, with the deer population increasing or decreasing depending upon whether the management favors or disfavors the food and cover requirements of deer.

Thus, if our hunt club leased their 2,000 acres from a timber manager who was managing this area for sawtimber, the hunt club members should know what to expect. Since the best range is briefly described as "brush in the sun," that period following the heaviest cropping or logging activities will be the period when larger numbers of deer can be considered optimum. This period following heavy logging lasts for a period of five, ten, possibly 15 years depending upon soil and other growing conditions. After this early favorable period for deer, the timber grows up and out of reach and starts shading out the lower vegetative layer which is the layer available to deer as food.

On an area of this small size the *optimum and sustained* number of deer might average 200 deer for the first five years following heavy logging, possibly 100 deer averaged for the second five years and still fewer sustained thereafter. The club that wants 200 deer on this area every year must buy the land and manage for deer, not sawtimber.

Not recognizing the decreasing food production changes that were occurring from the timber management practices, the club perhaps could increase the deer population temporarily by allowing all the does to go unharvested. However, this could only increase the rate at which the carrying capacity of the range was deteriorating, and force the herd to take more and more to the open fields and the farmers' crops. The doe deer that the club could have utilized then will be taken by poaching, crop damage permits, dogs, accidents, parasites and disease. These factors in combination with overbrowsing and lowered fawn production from inadequate nutrition during the early spring months will cause the population to stabilize, perhaps remain constant for a few years, and then fade out.

On a similar area open to the public, where no hunt club's self imposed restraints apply, an optimum deer population may be even harder to sustain, but for an entirely different reason. Here again, environmental conditions may be created that favor a build-up of the deer population to, say, some 200 head on a 2000-acre tract. Even before this maximum density is reached, however, word is likely to "get around" that the deer hunting is good and getting better. Hunting pressure is likely to increase several times as fast as the deer population and especially where such pressure is accompanied by a long season and a two-deer bag limit, this hunting pressure may hold both the population and the long-term average harvest below the optimum sustainable numbers.

Maximum Public Enjoyment

When we include the term *maximum public enjoyment*, we are thinking first of the many hours of sporting recreation that result through the process of proper population control. The term maximum implies the maintenance of populations and the implementation of fair and practical hunting regulations that will provide proper balance between herd and range and at the same time equalize the opportunities to enjoy the resource. The term public includes all who share, by law, in the ownership of the resource. The term enjoyment includes not only hunting recreation but also the many hours that are spent by the non-hunting public in looking for, watching and even photographing wild deer. Since through history, tradition, and law Virginia's deer belong to all the people, it follows that the opportunity to enjoy the resources should be shared by all the people.

Deer Management Problems

Virginia's District Game Biologists initiated and completed, during the winter of 1964-65, a state-wide survey of deer populations and deer management factors and problems. The most common problems disclosed during the survey are listed below. Their relative importance varies from region to region, and from area to area within regions. Generally they are of two types: problems that result in underpopulation, and those that result in overpopulation. Another type of problem lies within the realm of human relations. It has been said that deer management is easy but it is the people management that is hard.

Current deer management problems are listed in no special order of importance:

1. Increasing urbanization decreasing deer habitat and range.
2. Deer range too easily accessible to hunters.
3. Increasing hunter pressure.
4. Increase in illegal hunting activity.
5. Increase in and inadequate control over free-running dogs.
6. Deer season regulations too liberal for existing conditions.
7. Deer range too inacessible to deer hunters.
8. Increase in the posting of private lands against hunting.
9. Excessive crop damage by deer.
10. Deer season regulations too restrictive for existing conditions.
11. Timber sales unable to offset loss of food and cover through natural timber growth. (Continued on page 6)

Population control can be exercised effectively by varying the number of days on which antlerless deer may be taken. Neither a long season nor a two deer bag limit is a necessary management tool.
Commission photo by Shomon

(Continued from page 5)

Deer Hunting Regulations

Deer hunting regulations are the basic, most commonly recognized, and best understood tools used in deer management. It is agreed that game law regulations should be as uncomplicated and as uniform as possible over large areas, since complex regulations that vary from county to county or within counties create confusion and invite violation.

When deer regulations are set uniformly over a large region, it is also true that the regulations must be designed to accomplish the best results for the majority of areas within the region. Since within a large region there will be various levels of deer density, hunter pressure and accessibility, a regulation set to accomplish the best results for a majority of situations will still tend to be too liberal in some areas and too restrictive in others within the region. The solution to the problems caused by setting uniform hunting regulations over a region that has too much variability within it would be to establish uniform regulations over smaller sized regions in the hope that the resulting complexity of the total regulations may be offset by improved deer management results.

Deer Management Regions

Our survey of deer populations and our current knowledge of deer management and its problems suggest that separate deer management regulations be established for each of Virginia's six logical deer management regions. Whenever possible, of course, two or more regions should enjoy the same set of regulations.

It is logical that for deer management purposes the state be divided into north and south regions by the James River, and west to east by the physiographic regions: West of the Blue Ridge, Piedmont, and Tidewater. This would permit uniform hunting regulations within three to six large regions, and take into consideration the variabilities in hunting pressures, hunting conditions and deer populations.

Bucks begin to shed their antlers around the middle of December. This is a logical time to end deer hunting statewide.

Commission photo by Kesteloo

Deer Bag Limits

Although hunting regulations are imposed to protect game populations, they are also imposed to protect the rights of the people who share in the ownership of wild game. The use of bag limits is an attempt to distribute evenly the harvestable surplus of game to those of the public who exercise their right to participate in the sport of deer hunting. Initially the two-buck (rather than one) deer bag limit was enacted as a means of limiting the size of deer populations. It was later realized that although a two-buck deer bag limit did reduce the number of bucks in the herds, it had no effect upon limiting reproduction and growth of the herds. It was learned that only by removing some doe deer from the herd could the populations be held in control. However, when the doe deer became legal game, the two-deer limit was not reduced.

With over 200,000 licensed deer hunters competing with each other for a share in an annual harvest averaging

(Continued on page 22)

BIG GAME KILL

County or City	Deer 1962-63	Bear 1962-63	Turkey 1962-63	Deer 1963-64	Bear 1963-64	Turkey 1963-64	Deer 1964-65	Bear 1964-65	Turkey 1964-65
Accomack	86	....	....	70	....	....	62	....	....
Albemarle	781	6	57	652	5	28	383	22	31
Alleghany	453	22	69	515	34	65	581	15	140
Amelia	538	....	111	505	....	60	303	....	61
Amherst	246	21	35	248	23	21	254	11	41
Appomattox	181	....	56	151	....	25	107	....	24
Augusta	1,180	72	144	1,243	47	130	1,254	44	263
Bath	1,185	32	257	1,349	30	282	1,387	6	442
Bedford	30	11	23	46	11	....	37	6	17
Blond	308	9	....	279	14	....	218	6	....
Botetourt	470	20	94	510	37	39	551	7	158
Brunswick	324	....	57	256	....	21	154	....	25
Buckingham	2,387	....	226	1,789	....	37	810	....	....
Campbell	3	....	19	10	....	16	22	....	12
Caroline	1,757	....	132	1,369	....	45	1,258	....	50
Carroll	36	....	....	48	....	....	43	....	....
Charles City	1,021	....	....	1,059	....	....	586	....	....
Charlotte	36	....	24	60	....	16	36	....	25
Chesterfield	620	....	72	601	....	44	328	....	41
Clarke	88	....	....	88	....	....	104	....	....
Craig	497	5	121	643	8	91	707	7	192
Culpeper	134	....	18	114	....	....	50	....	....
Cumberland	723	....	56	768	....	27	460	....	63
Dickenson	24	....	....	11	....	....	14	....	....
Dinwiddie	636	....	83	585	....	55	371	....	31
Essex	110	....	7	148	....	....	165	....	....
Fairfax	50	....	16	54	....	....	20	....	....
Fauquier	322	....	59	355	....	33	214	....	32
Floyd	36	....	....	40	....	....	64	....	....
Fluvanna	825	....	33	800	....	18	541	....	29
Franklin	34	....	....	69	....	....	65	....	....
Frederick	402	....	19	412	....	27	500	....	92
Giles	472	4	....	501	3	....	542	7	107
Gloucester	203	....	....	243	....	....	286	....	....
Goochland	418	....	36	387	....	15	197	....	12
Grayson	378	....	....	374	....	....	382	....	....
Greene	72	6	....	44	8	....	47	7	....
Greensville	297	....	19	297	....	....	328	....	....
Halifax	201	....	54	126	....	17	77	....	22
Hanover	141	....	11	182	....	....	137	....	2
Henrico	160	....	8	145	....	....	82	....	....
Henry	6	....	....	1	....	....	8	....	....
Highland	510	11	175	614	10	185	566	10	269
Isle of Wight	417	....	....	468	....	....	483	....	....
James City	433	....	3	591	....	....	334	....	....
King & Queen	175	....	30	275	....	14	256	....	17
King George	402	....	14	402	....	....	420	....	....
King William	310	....	....	353	....	....	377	....	....
Lancaster	411	....	....	618	....	....	538	....	....
Lee	32	....	....	26	....	....	36	....	....
Loudoun	256	....	13	228	....	....	104	....	....
Louisa	511	....	47	468	....	19	245	....	36
Lunenburg	34	....	25	51	....	14	89	....	17
Madison	36	4	....	19	6	....	15	12	....
Mathews	131	....	....	155	....	....	83	....	....
Mecklenburg	45	....	21	63	....	....	57	....	....
Middlesex	97	....	....	118	....	....	118	....	....
Montgomery	....	2	....	7	1	....	18	....	145
Nansemond	511	2	....	660	9	....	484	11	....
Nelson	318	8	37	253	7	11	127	12	40
New Kent	1,517	....	16	1,027	....	1	570	....	5
Newport News-Hampton	172	....	....	162	....	....	172	....	....
Norfolk (Chesapeake)	1,248	1	....	1,151	7	....	763	7	....
Northumberland	286	....	....	364	....	....	366	....	....
Nottoway	1,210	....	34	611	....	18	141	....	18
Orange	166	....	43	126	....	31	55	....	24
Page	165	7	....	176	4	....	279	....	....
Patrick	257	....	....	255	....	....	257	....	....
Pittsylvania	24	....	9	37	....	12	36	....	10
Powhatan	671	....	60	544	....	23	315	....	27
Prince Edward	141	....	37	163	....	11	61	....	19
Prince George	1,256	....	45	878	....	14	420	....	17
Prince William	266	....	53	306	....	30	296	....	40
Princess Anne (Va. Beach)	44	....	....	44	....	....	60	....	....
Pulaski	105	1	....	160	....	....	149	2	....
Rappahannock	109	....	....	115	3	....	74	3	....
Richmond	389	....	....	349	....	....	353	....	....
Roanoke	8	1	....	13	....	....	11	....	....
Rockbridge	448	27	124	509	35	127	477	7	293
Rockingham	1,058	49	38	1,203	63	25	1,273	41	114
Russell	8	....	....	2	....	....	6	....	....
Scott	179	....	....	195	....	....	137	....	....
Shenandoah	719	1	24	763	4	36	820	3	147
Smyth	417	2	....	599	4	....	451	1	....
Southampton	1,312	....	15	1,609	....	....	1,384	....	....
Spotsylvania	495	....	84	464	....	46	177	....	51
Stafford	646	....	88	799	....	37	496	....	27
Surry	798	....	31	824	....	12	920	....	13
Sussex	645	....	79	694	....	33	780	....	25
Tazewell	165	4	....	115	....	....	91	5	....
Warren	275	....	....	301	....	....	340	1	....
Washington	171	....	....	174	....	....	172	....	....
Westmoreland	223	....	....	222	....	....	162	....	....
Wise	67	....	....	84	....	....	71	....	....
Wythe	290	11	....	304	7	....	401	6	....
York	386	....	4	519	....	....	541	....	....
TOTALS	38,836	339	3,065	38,377	380	1,811	31,162	259	3,266

Turkey harvest figures do not include spring kills.

THE DUCK DEBATE

By WILL JOHNS
National Wildlife Federation

This year's regulations were designed to send back to the breeding areas in 1966 twenty per cent more ducks than returned last spring.

WATERFOWL hunting regulations for 1965-66 are generally the same as last year's except for reduced bag and possession limits on mallards and pintail ducks in the Mississippi, Central and Pacific Flyways.

These special restrictions on mallards and pintails resulted from surveys by game management experts of the Department's Bureau of Sport Fisheries and Wildlife this spring and summer. The surveys showed the breeding population of these birds to be the lowest since reliable surveys were started in 1947.

But even before the Federal "framework" regulations for the 1965 waterfowl hunting seasons and bag limits had been officially announced, controversy over the duck situation was boiling in some state capitals. It was climaxed on August 17 when a public hearing was held by the Subcommittee on Fisheries and Wildlife Conservation, House Committee on Merchant Marine and Fisheries. Held at the request of the Louisiana Congressional delegation and conducted by the acting Subcommittee chairman, Mr. John D. Dingell (Mich.), the hearing's purpose, in his words, was to "ascertain the status of the nation's waterfowl resource, the intentions of the Bureau of Sport Fisheries and Wildlife in regard to protecting and perpetuating that resource, and the general type of hunting restrictions necessary to achieve those objectives." But, as in a similar hearing held in 1963, this meeting provided a public forum for expressions of violent differences of opinion between duck hunters, some state wildlife agencies, and the Bureau concerning waterfowl harvest restrictions.

Finally, John S. Gottschalk, director of the Bureau of Sport Fisheries and Wildlife—the Federal agency charged by law and international treaty with the protection, management, and preservation of the waterfowl resource—was called upon to explain the Bureau's position.

"We are not in the business of just preserving birds for the birds' sake," he said. "Our basic policy is to provide maximum recreational opportunity, taking advantage of the good years but adjusting to the bad years."

He then proceeded to paint a frank, but far from hopeless, picture of the current status of the waterfowl resource, as well as an outline of long-range management goals. Using a blackboard and chalk, he graphically outlined a mallard population analysis. He emphasized that the figures were not actual counts or survey figures and could not be applied to this or any other year. But in his hypothetical "year x," and starting with a breed population of 6 million birds coupled with a production index of 1.2 (i.e., 7,000,000 young produced), the fall flight would be 13,000,000 ducks. During that flight, natural mortality (entirely unrelated to hunting) is constantly about 20 per cent of the total (2,600,000 birds). The Canadian hunters harvest 1,500,000 birds, and the U. S. hunters bag 3,900,000. This would leave, Gottschalk said, a potential spring breeding population of 5,000,000 mallards. Without any change in nesting conditions or hunting regulations, such a breeding population probably could be maintained and would rather consistently produce a harvestable surplus of 2,900,000 birds. By contrast, however, if the breeding population could be built back up to 11,000,000 birds, such a population would produce a harvestable surplus in the United States of about 5,800,000 mallards—almost doubling the allowable take.

The Director indicated that recommendations made for the 1965-66 hunting season regulations were aimed at increasing breeding populations by at least 20 per cent. On the valid assumption that habitat conditions on the breeding grounds next year would be as good as, if not better than, this year, he said, "If we are willing to put 20 per cent more birds back up there next spring, we might be able to harvest safely almost 6,000,000 mallards in 1966."

In effect, Director Gottschalk told the Subcommittee and American wildfowlers that this is a year of opportunity—that one bird kept out of bag this fall may be worth more, in the long run, if it could be kept flying back north next spring to produce more birds in the Canadian "bush." With the drought in the "duck factory" of North America apparently broken, there is real hope for a definite upswing in waterfowl populations, starting next year. His words were echoed by Secretary Udall in making the official announcement of the 1965-66 Federal regulations—"The surest way to bring back the days of larger bag limits and longer seasons is to employ modest restraint now."

"Our basic policy is to provide maximum recreational opportunity, taking advantage of the good years and adjusting to the bad years."
Commission photos by Kesteloo

Waterfowl Management Guidebook

A booklet recently issued by the Atlantic Waterfowl Council titled *The Atlantic Flyway Waterfowl Management Guide* should be of great value and interest to Virginia duck and goose hunters, especially those who own or control marsh land or other waterfowl winter habitat. In addition to much accurate and timely information on the many species of migratory waterfowl that use the Atlantic Flyway, the booklet sets forth specific management goals and guidelines for state and federal agencies and private landowners. Available from the Commission of Game and Inland Fisheries, Richmond, at one dollar a copy. Please make check or money order payable to the Treasurer of Virginia.

Don't Fire Until . . . !

By HARRY L. GILLAM
Information Officer

"DON'T fire until you see the white of their wing patches" would be good advice for hunters in the bonus scaup area, consisting of Chesapeake Bay plus Northampton and Accomack Counties this fall. The distinctive white stripe in the wing of the scaup is the best field mark for distinguishing it from its look-alike cousin, the ring-necked duck which is not classified as a bonus bird. Hunters will also need to be able to recognize canvasbacks, wood ducks and mallards in flight and in hand since they are allowed no more than two of any one of these species in their daily bag of 3 ducks.

The white speculum of the scaup, a characteristic of both males and females, distinguishes it from all other similar diving ducks, whose speculums are gray in color. Goldeneyes, buffleheads and mergansers also have white on the

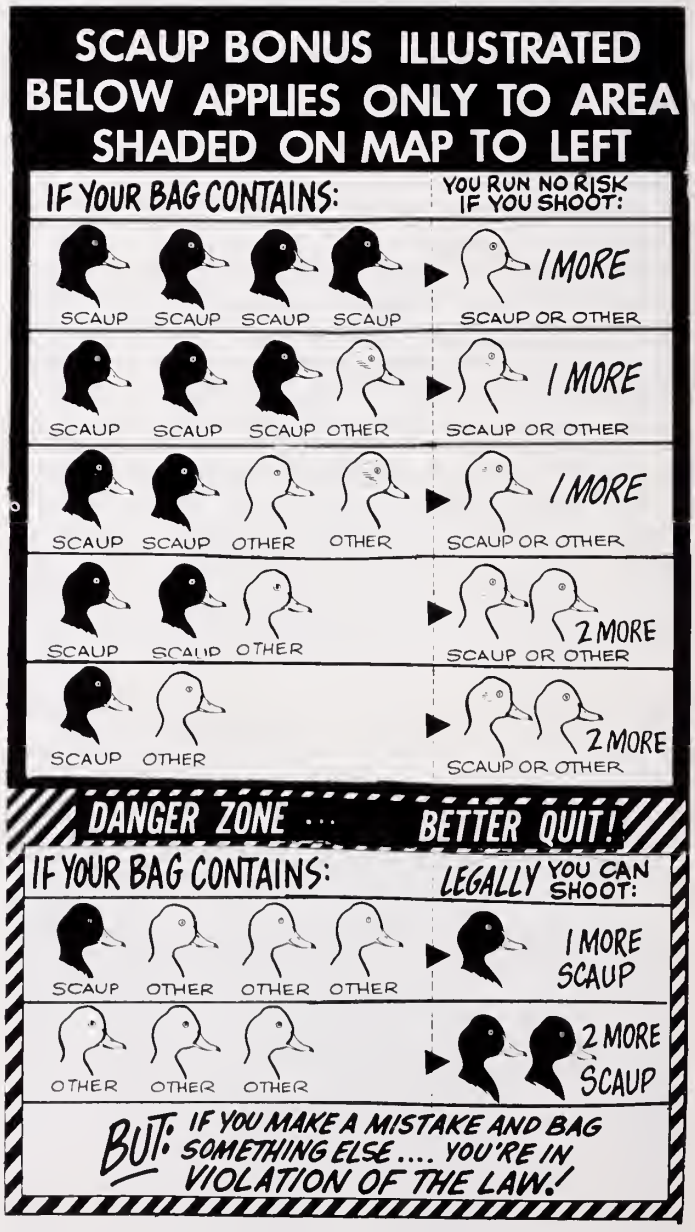
wings but bear little resemblance to the scaups. Actually, hunters are advised to rely on in-hand identification as portrayed in the accompanying table.

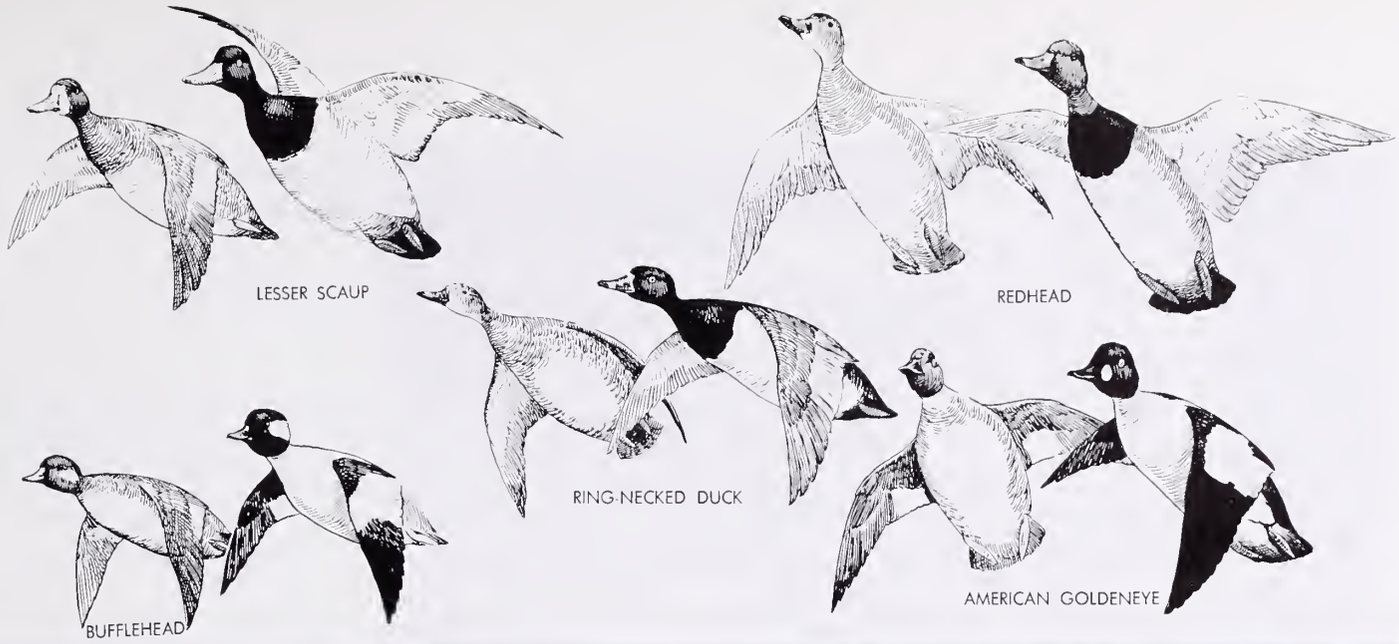
Bonus scaup shooting is allowed this year only in the area shown in the accompanying map. This area includes the waters of the Chesapeake Bay bounded by the first upstream bridges of its tributaries on the west, by the Hampton Roads and Chesapeake Bay Bridge tunnels and U.S. 60 on the south and including the tidal waters of Accomack and Northampton Counties. The roads making up the western boundary are as follows: (1) Route #644 and #200 in Northumberland County; (2) Route #3 from Kilmarnock in Lancaster County to Middlesex County; (3) Route #3 in Middlesex and Mathews Counties; (4) Route #3 and 17 in Gloucester County to York County; (5) Route #17 in York County; and (6) Route #17 and Interstate 64 in Newport News and Hampton. Hunters are allowed to bag 2 scaup in addition to their daily bag of three ducks within this area.

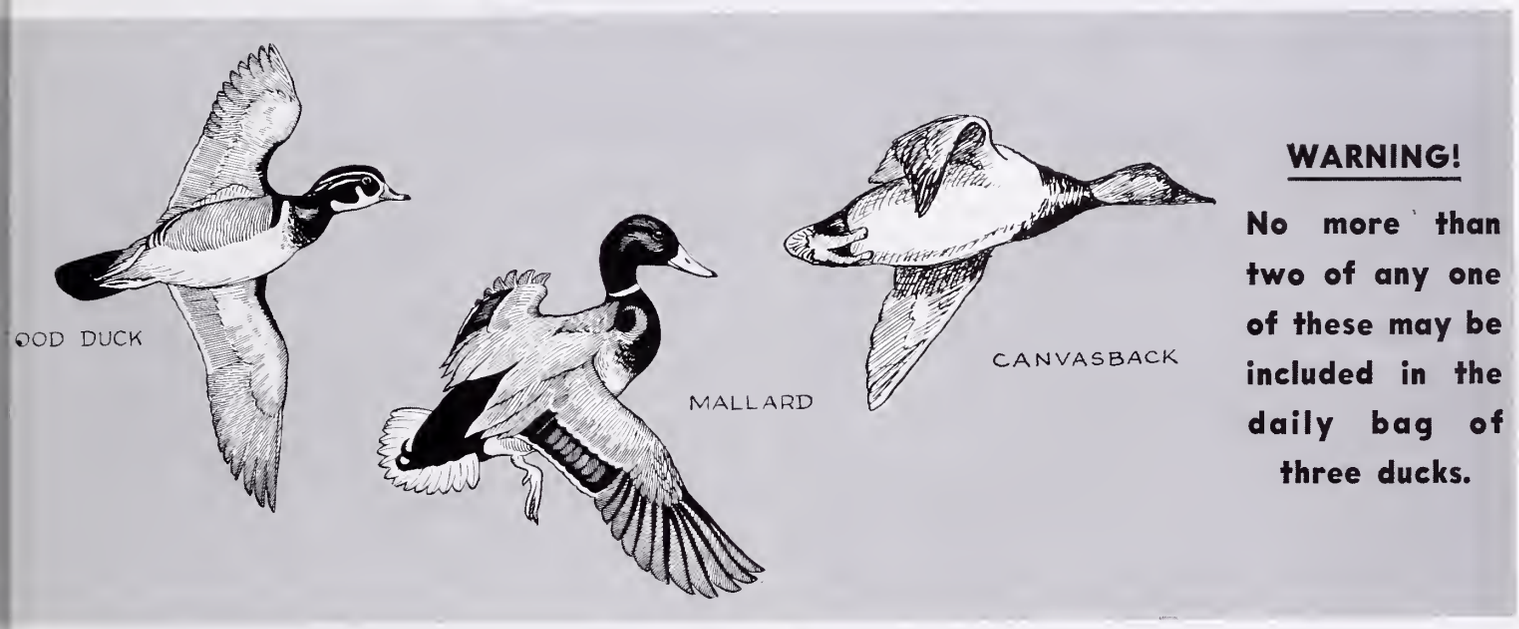
The mallard is almost universally recognized by hunters, so the limitation of 2 in the daily bag should pose no great problems in identification. Canvasbacks are likewise quite easily distinguished by their profile and the distinctive shape of their bill when in hand. These easily recognized characters apply equally to the somber colored female.

The wood duck has long been protected by some form of regulation and most hunters have, of necessity, learned to identify this beautifully colored duck. Although the female lacks the brilliant colors of the male, she has the same general body shape, her actions are similar, and she is usually seen in the company of the more easily identified males.

The restriction of two on these species should cause most hunters little difficulty except that when his first two birds are of one of these species he must be extremely selective in bagging his third duck. For example, if the first two birds downed are mallards, the hunter must be careful not to shoot another mallard. He may fill his bag with a canvasback, a wood duck, or any other species except a mallard.



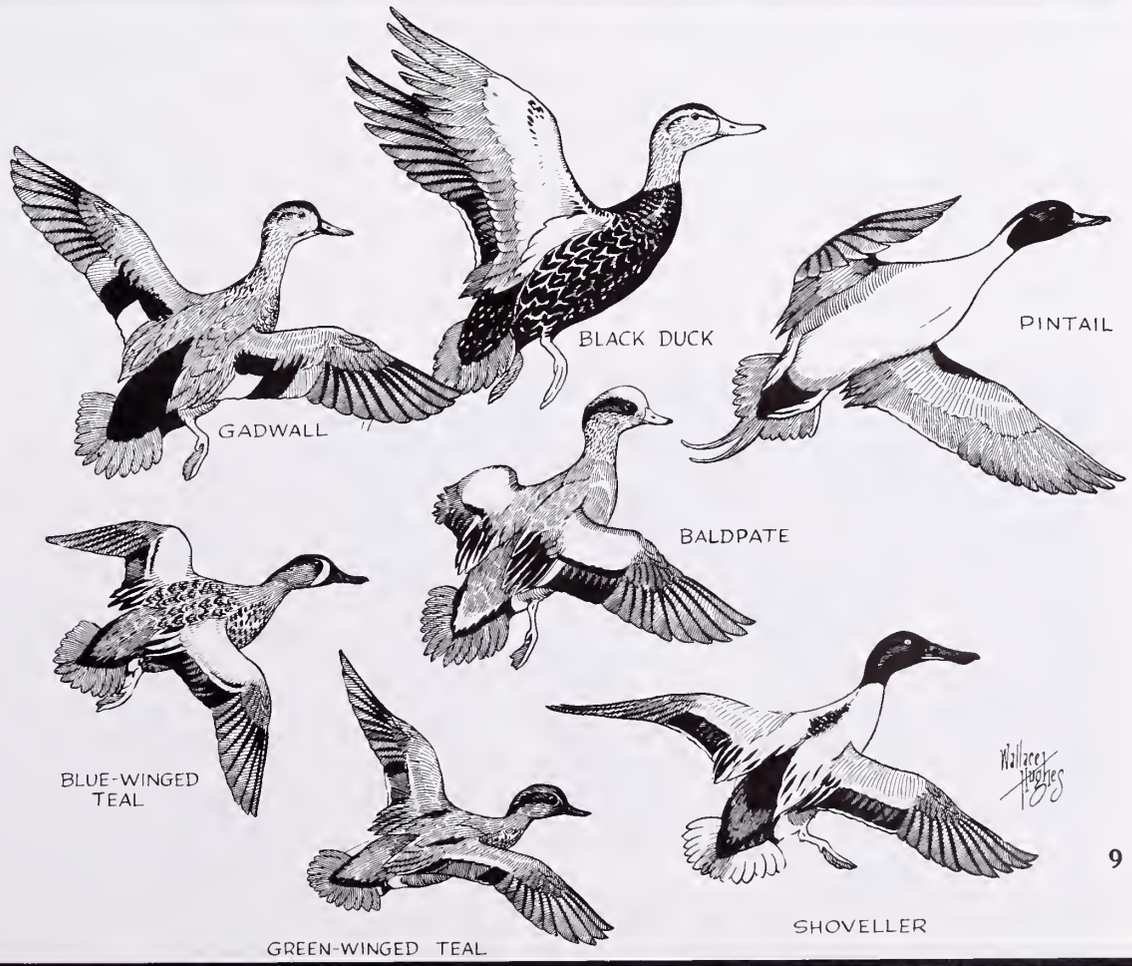




WARNING!

No more than two of any one of these may be included in the daily bag of three ducks.

Play it safe — learn to identify your ducks. Know what you are shooting.



WARM TIPS FOR COOL CAMPERS

By JIM RUTHERFOORD
Radford

HEADING out for a deer camp this season? I don't mean one of those plush lodges complete with electricity, running water and central heating that some, more affluent, friends call "camps" to justify both their extravagance and their inability to enjoy camping. I mean an honest-to-goodness home under canvas or, at the very most, a tent-topped camp trailer. A little know-how and a lot of ingenuity can make such camps quite comfortable in even the coldest weather.

I recall one such camp that my friend, Wendell Horton, and I made in the Dismal Wildlife Management Area a few years ago. We had a "ragtop" camp trailer, several square yards of tarpaulin and a moderate sized tent. This was our home for two weeks, during the deer and grouse season, while the weather alternately poured snow, sleet and rain; and we had a ball. We had forded the creek to a grove of large white pines, pulling the trailer behind Horton's Jeep. On the third day the creek had risen too high to ford back again and we were cut off from the highway. Our only mild concern was the possibility of running out of gasoline. We made ice each night by leaving bowls full of water out to freeze, and popped them into the refrigerator in the morning. After about a week of this, Game Manager Ramon Sparks (now Refuge Supervisor on the Clinch Mountain Area) felled a tree across the creek and came over to check on us; to see if we "wanted out." We didn't. Ramon had our Jeep cans filled with gasoline for us and we floated them back across the creek for another week of the most enjoyable camping and undisturbed hunting either of us has ever had. We ate well and in comfort, slept warmly and accomplished our "housekeeping" with a minimum of work and time away from hunting.

Much of the comfort was due to having plenty of living space in our semipermanent camp. The tent served as storage space for excess gear and for drying wet clothing in the mild heat from a Coleman 500 stove with heater drum. The three-sided tarp served as a cooking and dining area as well as a windbreak for both tent and trailer. A cut-down oil drum, found on the site, served to warm the open area with an open fire reflected into the space by a portion of the drum left on for that purpose. The trailer was heated by its own built-in, gas-fired, floor furnace. One very cold night (the temperature dropped to about 10 degrees with a cold wind) we used the gas cook stove inside the trailer for preparing dinner and ate inside. On other nights we were quite comfortable in front of our open fire under the tarp.

This was a fairly elaborate camp for only two men. I have, however, been almost as comfortable with far less equipment. The secret is in making the most of what you have to work with. Even sleeping out beside a late killed deer isn't too bad if you know how.

The first rule of cold weather hunting and camping is to dress comfortably; not in one or two bulky garments but in layers of light wool over cotton thermal underwear. As you alternately warm and cool due to periods of tracking and trail watching, the layers can be shed or put back to maintain body temperature at a comfortable level. For this reason I usually wear a small knapsack or rucksack in which removed clothing can easily be packed. There is also room for other items such as camera and film, plastic water bottle, concentrated food bars and other personal items such as a tiny, 2-ounce, wire saw that is much handier for felling small trees for firewood or a carrying pole for a deer than is a bulky, heavy ax. A light load carried in this manner is much more comfortable than a loaded-down hunting coat. The pack allows quick gun swinging without the drag of weight on shoulders and under the arms and it's quieter in the woods than a duck or canvas coat that swishes and pops when struck by limbs and tree branches. So much for clothing. The subject would make an article in itself. I mention it here because your hunting clothing, carefully chosen, is also the most comfortable clothing for cold weather camping. That cotton thermal underwear makes fine sleepwear too. Just be sure to change to a fresh outfit each evening leaving the alternate suit to dry and air. The same goes for socks. Dry socks keep your feet warm either when sleeping or hunting.

Shelter is the most important part of your camp. Choose it wisely.

With the tremendous upsurge in camping in recent years a flood of nearly worthless tents, camp trailers and other outdoor equipment has found a market among unsuspecting,

This 8' x 10' tent sleeps four, is a comfortable two man shelter for extended stays. Tempered aluminum outside frame is rigid when assembled. Entire tent may be picked up for relocation. Cutaway view shows interior arrangement for daytime use.

This outside frame umbrella tent is a huge 12′ x 12′, big enough for comfortable semi-permanent camp for four men. Fitted cap fly keeps in heat; 9′ x 9′ canopy serves for outside dining in mild weather.

undiscerning campers. Some of it is fine for fair weather summer camping, but worthless for cold or rainy weather. If you are buying a new tent for all weather camping be sure to check such design extras as weather flaps over zippered closures; rain flap over entrance that is not also used as a door flap; full zippered closure of entrance (many such doors have zippers only down the center of the door with the bottom left open to the cold air). Windows should be operable from inside the tent to allow changes in ventilation.

If you buy a tent with sewn-in floor, spend a few dollars more for a floor cloth to lay over it. Removing the cloth periodically allows a great deal of dirt to be emptied outside, keeps the floor clean and saves a lot of sweeping. Even heavy industrial (.006″) plastic sheeting will serve well for this short-term use.

A tent with sod cloth flaps is much to be preferred to the sewn in floor. Leaves, pine needles, sod, or straw may then be spread inside the tent and the resulting soft, absorbent floor covered with the removable floor cloth. More pine needles piled against the outside make a draft proof "foundation."

Many popular umbrella tents with outside frames are, in this camper's humble opinion, a snare and an abomination. Requiring Rube Goldberg junction "spiders," specially bent aluminum tubing that frequently bends out of shape in a wind or with a snow load, the things are not easy to erect and guy, and they take up a great deal of available room in one's vehicle.

The Indians of northern Quebec, where I have done much camping, to a man use the time-tested and proven "A" wall tents of medium weight white canvas or duck. The three poles required may be cut on the site, if previous families have left none. A sphagnum moss floor and moss piled against bottoms of the walls makes the whole thing snug. A folding sheepherder or Hudson's Bay stove gives comforting warmth even in temperatures that hover in the "thirty below" bracket for several months at a time. The camping hunter in Virginia's mountains will do well to use light telescoping aluminum or steel upright poles and a sectional aluminum ridge pole. These are all straight members that take up little room when packed. A stovepipe opening in the top will allow use of a wood burning stove for both cooking and heating while venting both smoke and fumes to the outside. Nevertheless, when any heater is in use, your tent should have some ventilation.

Another, more modern, tent that I have used with great satisfaction is the Draw-Tite, designed by industrial engineer and outdoorsman Robert Blanchard, and manufactured by Eureka Tent and Awning Co., of Binghamton, N. Y. These tents are roomy, light in weight and compact. My 5 x 7 foot two sleeper weighs only 10 pounds complete with poles. The latter are all identical short lengths of tempered, spring aluminum that allow the tent to be erected

(Continued on page 21)

Camping vehicle like this one makes excellent camp for two men in cool weather. Accessory "top expander" gives headroom for inside cooking or dressing.

The Gray Fox

By DOROTHY E. ALLEN
Education Officer

THE gray fox, *Urocyon cinereoargenteus*, is neither a sinner nor a saint, but only a small canine playing the role of a predator in the famous scheme, the "balance of nature," on an earth both for foxes and for the people that foxes have to live with. The foxes were here first. Their pedigree was established in the dim past.

The gray fox is a native American.[1] "Brer fox" is cussed and he is praised. Cussed as a burglar for his shenanigans in the chicken yard; praised for cleverness, agility, beauty and instinctive wisdom combined in one little (ten pound) package.

He enjoys life. He works. He plays and he has responsibilities. Late winter finds the grizzly gray overcoated and capped rover scouting the countryside (sometimes 50 to 100 miles) in search of a mate. Wherever he travels he leaves his personal calling card. A musk gland on the upper side of the tail near the base could be called his identification disk, for the scent it excretes is used almost certainly for communication with others of his kind.

When some pepper-and-salt coated blond in reddish stockings appeals to his roving eye he will pursue the vixen. If he has competition for her affections furious tussles take place. The female appears to enjoy the argument between her suitors and sits back with a carnivorous smile on her cunning face to await the outcome. The more valiant "dog" will attack the rival Don Juan with several good nips, thus winning a wife.

When the honeymoon is over, the female is left to do the digging of a suitable den. Perhaps she is too particular about how she wants the nursery or perhaps male foxes are like some men and would rather go rabbit hunting! Of course, he can claim he needs the practice so as to be able to feed the new family.

After a gestation period of 51 days four or five three-ounce pups are born. By this time the vixen isn't speaking to her spouse and won't let him near his offspring. The newborn whelps are blackish, blind and scantily furred. In 9 to 12 days their eyes open and in a month's time they resemble their parents in coloration. The young are weaned in 8 to 10 weeks and then appear at the den's entrance. They are frisky and lively, have lusty appetites and evidently are quite appealing to their father. During this time father has mended his carefree ways and, like the sly male he is, leaves tidbits at the den opening for his wife and kits. All is forgiven and the discreet male becomes a model husband and one of the most devoted of wild fathers. For this foxes are exemplary. Both parents hunt for food and they are not particularly choosey. The fox hunts slowly, going at a leisurely trot until his nose picks a whiff of scent from the air. He stops motionless until he locates the direction of his game, and then as though he were walking on eggs will approach his victim.

When the kits have grown large enough to travel they join their parents and hunt as a group into late summer. The fox is omnivorous in its food habits, which literally

means he is an "everything eater." He eats what is most handy, taking the dregs of the countryside (highway killed animals, those wounded during hunting season or crippled by farm equipment) as well as the cream of the crop (all wild berries found in their habitats, all small rodents—particularly field mice—rabbits, woodchucks, snakes, shrimps, clams, crayfish, grasshoppers, frogs, fish, young turtles, field crops, acorns, melons, grapes and any bird they can catch). The way he carries a heavy load shows his cleverness. He slings a hen or small bird over his shoulders keeping the head in his mouth to steady the burden.

Summer might also be called the whelps' schooling period. Besides being taught to find their own food they pick up the elementary fox traditions concerning man and his dogs. The family lives a luxurious and comparatively easy life during the summer with nothing to worry about except fleas and ticks. In August or September the family ties are broken and the young go off to seek their fortunes leaving their mother and father to a roving life partnership.

Foxes are predators and since they depend largely on other animals for food it is necessary to keep the number of foxes in balance with its habitat. This can be done by keeping a close check on fox populations and trapping some of them when their numbers become too abundant. If the fox populations were reduced too much, we would find that hawks, owls, weasels, raccoons, martens, skunks, wild house cats and dogs would move in to play their role.

Gray foxes are not as popular as their red cousins for fox hunts, for they do not give as good a chase but frequently resort to trees when pursued. They use their front feet to grasp the tree trunk and the hind feet to push upward. The gray fox is a desperate fighter when at bay.

Probably their most serious enemy is disease; the most dreaded is rabies, which is always fatal. Rabies usually reaches epidemic proportions when the population is highest.

Despite the violent end in store for them, foxes probably do a lot less worrying about what is going to happen than people do. We have yet to find a fox with ulcers.

[1] The red fox was an English importation to Maryland in 1730 and spread into Virginia area around 1779.

VIRGINIA WILDLIFE ☆ ☆ ☆ ☆

CONSERVATIONGRAM

Commission Activities and Late Wildlife News . . . At A Glance

CHESAPEAKE LANDS IN NELSON COUNTY OPEN TO HUNTING. Through a cooperative management agreement, the Chesapeake Corporation of West Point, Virginia, has opened over 3,000 acres of their lands in Nelson County to public hunting this fall. Under this agreement the Commission will be permitted to initiate wildlife habitat improvement work which will not conflict with the primary use of the lands by the Chesapeake Corporation.

The land involved consists of six separate tracts totaling 3,039 acres in eastern Nelson County. Any properly licensed hunter may hunt on these lands provided he abides by state laws and Commission regulations.

The Chesapeake Corporation has, for a number of years, allowed hunting under a similar agreement on 2,645 acres of its lands in Bedford and Campbell Counties. A 3,000 acre tract of corporation land in Surry County has been similarly opened to hunting in the past but was closed last fall for an indefinite period because of timber operations which made hunting impractical.

Lands made available by private companies, such as the Chesapeake Corporation and others, and the various agencies of the state and federal government, have been a key factor in maintaining public hunting in eastern Virginia.

6,810 ARRESTED FOR GAME, FISH, BOAT VIOLATIONS. Wardens of the Virginia Commission of Game and Inland Fisheries apprehended 6,810 persons for violations of the game, fish and boating laws during the 1964-65 fiscal year. Of these, 6,340 were convicted, an increase of 52 over the total for the previous fiscal year.

The 2,626 convictions for game law violations topped the list. Trespass was the most common cause for arrests followed by hunting without a license and hunting during the closed season. Unlawful guns and violations of the migratory bird hunting laws were also leading offenses. A total of 100 individuals were convicted on spotlighting charges.

Of the 2,864 convictions for fish violations, over half were arraigned for fishing without a license. Trespass was a leading cause for arrests in fishing also. Arrests for exceeding creel, possession or size limits jumped over 200 percent presumably because of the 12-inch minimum bass size limit put in effect on some waters during this period.

Boating law convictions dropped to 850 from 1,069 the previous year in spite of a larger number of registered boats during the period. Equipment violations still accounted for the majority of these cases. A large number of boaters were convicted of operating unregistered boats propelled by motors of 10 horsepower or more.

Virginia's 129 man warden and supervisory force put in 356,299 hours during the year. They covered over 3 million miles by road and 92,000 miles by water in the performance of their duties. They checked the equivalent of about half of the licensed hunters and fishermen in the state and over half of the registered boat owners.

COMMISSION CONTRIBUTES $5,000 TO FISHERIES UNIT. The Commission of Game and Inland Fisheries has approved an appropriation of $5,000 annually to the new Cooperative Fisheries Research Unit being initiated at Virginia Polytechnic Institute. The U. S. Fish and Wildlife Service plans to contribute approximately $40,000 to the facility including the salaries of a Unit Leader and an Assistant Unit Leader. V. P. I. will provide classroom and laboratory facilities plus faculty members for instruction in specialized fields.

The Unit will offer research and classroom work leading to Master of Science and Ph.D. degrees in Fisheries Management. In addition to the research contributions this group is expected to make, the unit will provide an in-state source of trained personnel for fisheries research and management positions in Virginia. The training facility is expected to go into operation sometime in 1966.

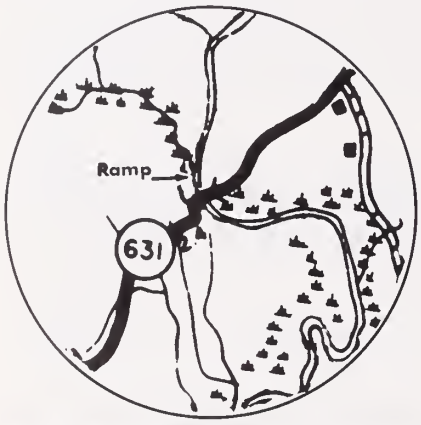
Boating Access In Southeastern Virginia

By HARRY L. GILLAM
Information Officer

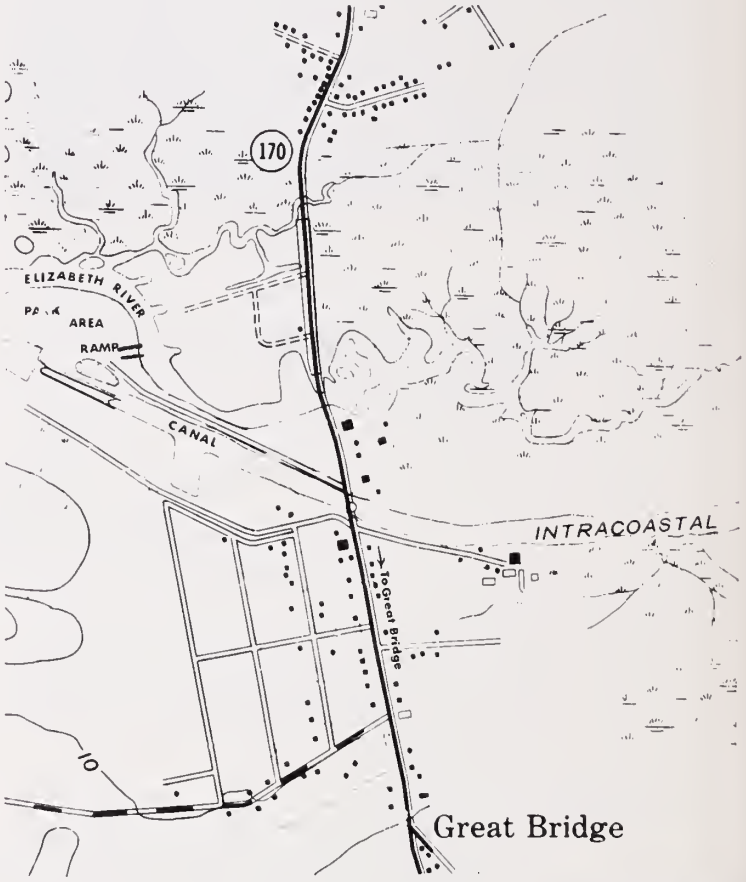
WITH the profusion of commercial marinas and launching facilities in the tidewater sections of southeastern Virginia, the Commission of Game and Inland Fisheries has concentrated its boating access development work on freshwater areas where adequate access was lacking. On Back Bay, the largest body of freshwater in this section, the Commission has constructed three well spaced ramps which make all major sections easily accessible to hunters, fishermen and boaters.

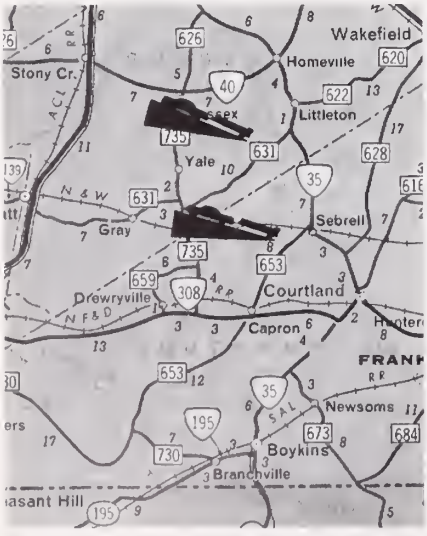
Back Bay has long been famous as a duck hunting and largemouth bass fishing area, boats being essential in the successful pursuit of both of these sports. Although most of the blinds and waterfowl shooting areas are private, the Game Commission's recent acquisition of the Trojan Waterfowl Management Area on the west side makes it possible for hunters to use their own boats and decoys by paying the $3.00 daily blind fee. Waterfowl hunting is also available on a guided party basis on the nearby Pocahontas Waterfowl Management Area for a package fee of $23.00 per party.

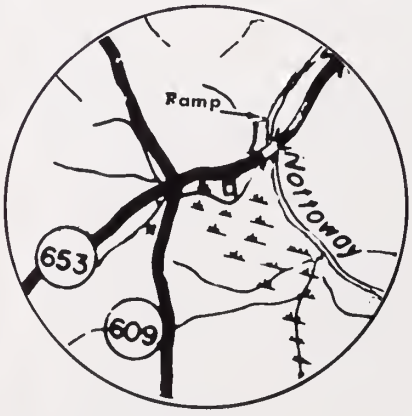
The ramp on Knotts Island is made of creosoted timber and is accessible through North Carolina. A graveled ramp at Trojan-Pocahontas headquarters serves as a launching site for hunters and fishermen embarking from this area. At Back Bay Game Warden Headquarters a creosoted timber



PETERSON'S BRIDGE—The graveled ramp and parking area is suitable for launching light fishing boats. It is on the west bank adjacent to the route 631 bridge.





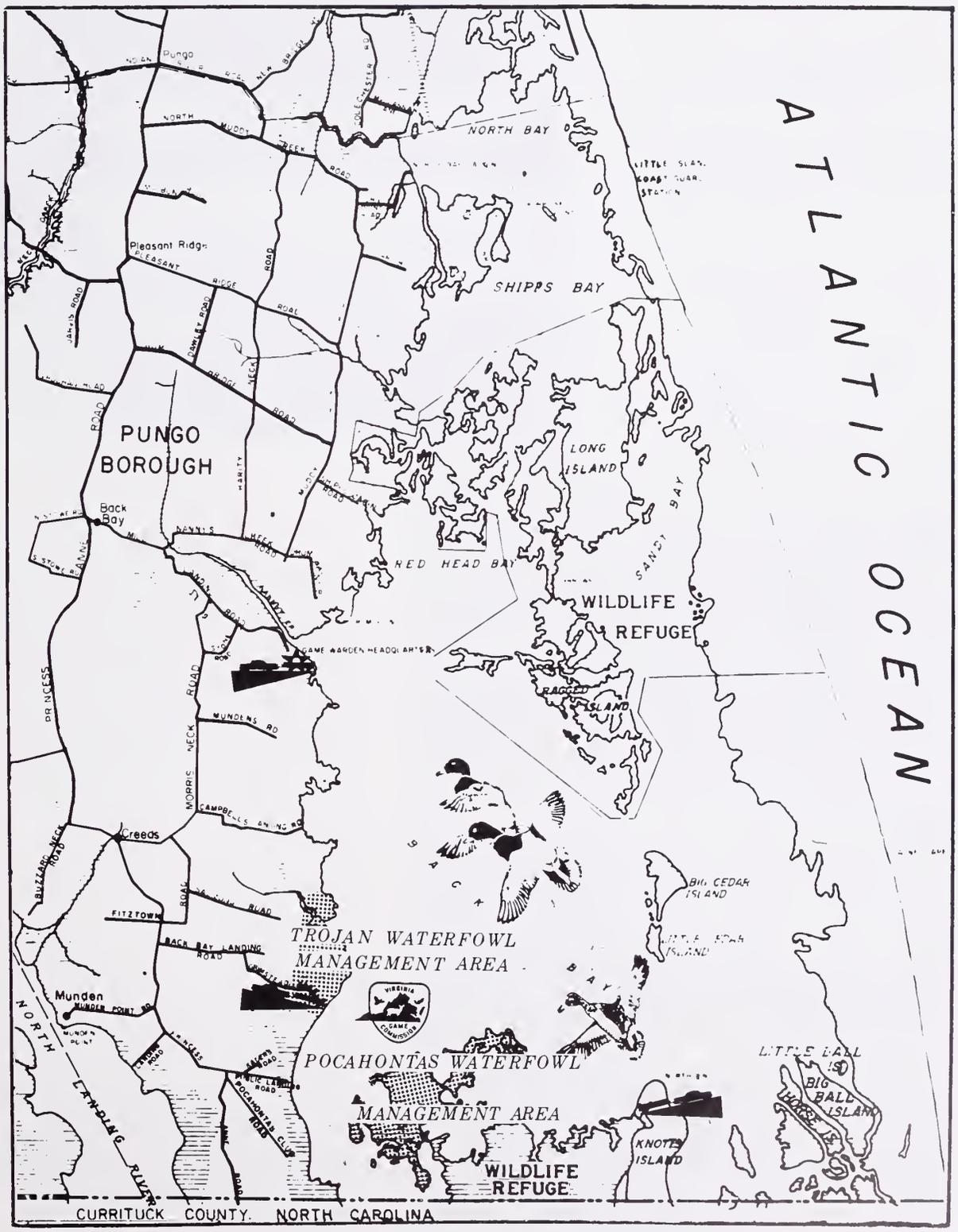


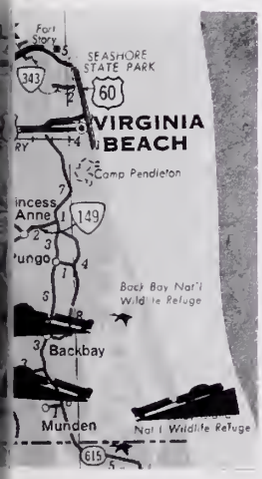
PETERS BRIDGE (formerly Carey's Bridge)—This area features a graveled parking area and two graveled paths to the river for launching fishing boats. The put-in point is on the north side of the bridge along the west bank of the Nottoway River.

ramp is provided for public use. Other commercial landings and facilities are to be found on Back Bay in addition to these public ramps.

Two public landings have been constructed along the Nottoway River on lands generously made available by the Union Bag-Camp Paper Corporation for fishermen access to this popular stream. At Peterson's Bridge in Sussex County where Route 631 crosses the river there is a graveled parking area and ramp along the west bank. In Southampton County the Commission has completed a graveled parking area and 2 access paths for the launching of fishing boats north of Peters Bridge (formerly Carey's Bridge) where Route 633 crosses the Nottoway River. These access points are strictly for hunters and fishermen and are not suitable for the launching of runabouts and large pleasure boats.

The Commission plans to have a concrete ramp and parking area completed west of Great Bridge by the advent of the 1966 boating season. The facility will be located adjacent to a proposed park to be constructed by the City of Chesapeake on an island between the Elizabeth River and the Chesapeake Canal. It will be accessible from Route 170.





GABIONS FOR STREAM IMPROVEMENT

Series of gabion dams increase stream's surface area and help stabilize stream bed.

Contributed by: Conservation Services Bureau, Inc., New York City

TO millions of fishermen, the arrival of the hatchery truck is synonymous with good fishing. For a brief time, at least, the fishing will be fast and furious, with trout in the creel for all. But to a growing number of fishery biologists, those tank trucks with their consignments of hatchery-reared trout represent a further postponement of the really good fishing that might otherwise be created.

One partial solution to the problem is the increasing use of the gabion method of stream improvement. Whereas stream improvement work carried out under conventional methods requires costly materials, heavy equipment, and an army of workers, the gabion method is relatively inexpensive.

What are gabions? Briefly, they are heavy gauge wire mesh baskets which can be placed in a streambed, filled with rocks, and wired shut. The baskets are used as building blocks and wired together in series to form weirs, deflectors, and other types of stream improvement devices. Introduced in the United States in 1957, they are now being used in stream improvement projects in about a dozen states, including Virginia, West Virginia, New York, Pennsylvania, California, New Hampshire, Massachusetts, and Tennessee.

Some of the gabion structures that are being installed to restore "put and take" streams to productive trout fisheries, and the improvements they make possible, are as follows:

Small headwater dams. These are installed along shaded stretches of the headwaters and upper tributaries, especially in the vicinity of springs and seepages. During hot weather the cold water thus impounded feeds the downstream stretches, contributing to lower water temperatures.

V Deflectors. These "V" shaped rows of gabions are especially beneficial on wide, flat stretches where the stream is exposed to the heating rays of the sun. The current is narrowed and accelerated, minimizing the heat intake. The accelerated flow scours out deep, trout holding channels in mid-stream. The backwater on the downstream sides provides trout cover and gravel beds suitable for spawning.

Weirs and low level dams. Where water temperatures are a problem, these should be limited to shaded stretches, especially where cold springs or cold tributaries empty into the mainstream. They increase the stream's surface area (which is related to its trout carrying capacity). They also help stabilize the streambed, minimize the effects of floods and shifting rubble. The spillways add oxygen to the water. Deep pools and channels are scoured out below the weirs.

Groins or wing deflectors. These one-sided V deflectors consist of single rows of rock-filled gabions jutting out from the bank at a downstream angle. They divert the current away from eroding banks, prevent silting. The backwaters behind the deflectors provide trout habitat and spawning beds.

All of the structures described can be installed at relatively low cost using unskilled labor or volunteers from sportsmen's clubs. After the gabions are placed in position, ends well anchored into cuts in the banks, the baskets are filled with rocks from the streambed and wired shut. Properly installed, they will last for years.

FISH DIVISION CHIEF'S COMMENT

"Opportunities to apply the gabion method of trout stream improvement in Virginia are limited to special, almost unique situations. As relatively inexpensive as these types of weirs, dams and deflectors are to install, it would still be a waste of effort and money to undertake a general program of gabion construction on our public trout waters.

"Gabions can provide a definite benefit in spreading out the fishermen, by providing more pools to fish, on a heavily used stream. They can cut down predation losses, by providing additional cover and thus increasing dispersion and reducing concentrations of fish. They are useful in building fords to provide better access to some good stretches of water, and in bank stabilization.

"But gabions do not increase productivity (food supply) or the amount of water in the streams, and these are the chief limiting factors on almost all of our public trout streams. Note the excellent volume of water flow in the accompanying photograph. If we could duplicate this throughout July, August and September on our Virginia trout streams, I'd be inclined to climb aboard the gabion bandwagon."

Robert G. Martin

Chief, Fish Division

In addition to being economical and easy to install, gabions have other advantages over improvement devices constructed of concrete, wood and steel. One major advantage is their flexibility. Should the streambed scour out or settle, the gabions settle with the shifting foundation. Moreover, the heavy gauge wire, designed specifically for such structures, is extremely strong. It is coated for long life under water.

Another reason for the effectiveness of the gabion method is the patented triple twist in the hexagonal wire mesh. If a break occurs, the triple twist prevents unraveling, as would occur with fencing wire or chicken wire. The gabion baskets are constructed to meet specifications of the U. S. Forest Service, a major user.

Because of their economy and simplicity, gabions are fast growing in popularity with sportsmen's clubs and private conservation organizations.

Additional information on the gabion method of stream improvement is available from Maccaferri Gabions of America, Inc., 50 East 42nd Street, New York, New York 10017. The firm provides a free "Gabion Information Kit" and also makes available the services of technical representatives, on a consultant basis, to assist in major projects.

The Heart of the Hunter

HUNTING is one of the greatest pleasures and finest forms of outdoor recreation that a man can enjoy.

For your own protection, and the protection of others, know the *heart* safety rules and what to do in case of a heart attack.

Take as good care of your heart as you do of your gun. Hunt happily, and come home healthy. The American Heart Association suggests how you can do it.

Check with your doctor on your physical condition. Keep fit the year round. This includes watching your weight.

Plan your hunt. Allow time to adjust to the altitude. Know the location of the nearest phone, doctor, ranger station or Fish and Game department men.

Take plenty of short rests. Avoid unnecessary exertion.

Hunt at a steady, unhurried pace. Don't strain yourself in emergencies. Get your partner to help.

Keep an eye on the weather. Don't try to do as much in hot, humid weather as in cool weather. Don't try to do as much at 50 as you did at 25.

Eat moderately. Take a rest or nap after each meal.

Plan your camp routine to eliminate unnecessary work. Work at a steady pace that suits you. Don't strain yourself. Get help for heavy jobs.

Higher altitudes may lower your tolerance to alcohol. Limit your drinking.

The hunter with a known heart condition should make sure that at least one member of the party knows of his condition, what medicine he takes and how administered. *He should never hunt alone.*

Contact a doctor immediately. Don't let the patient walk or ride a horse. Try to get help to come to you, but if this is not possible, make a litter and carry the patient where he can get medical attention. Often a jeep or helicopter can bring the patient out with minimal effort.

Help the patient take the position most comfortable to him. This probably will be half way between lying and sitting. Usually he cannot breathe comfortably if he lies flat.

Loosen tight clothing such as belts and collars.

See that the patient does not become chilled, but do not induce sweating with too many blankets.

Do not give the patient anything to drink without the doctor's advice.

FOR THE *Thrifty* TROPHY COLLECTOR

A Virginia taxidermist offers timely advice to hunters and fishermen who want their trophies preserved but must exercise maximum economy. Proper treatment of trophies in the field can save many dollars.

By DON JENKS
Alexandria

Commission photos by Kesteloo

TODAY'S high material and labor costs have forced taxidermists to escalate prices accordingly. Having a fishing or hunting prize converted to a trophy mount today may be too expensive for the sportsman who must operate within a limited budget.

The thrifty sportsman, however, often can have a trophy mounted at a non-prohibitive cost if he will abide by certain basic rules. Careful handling of specimens in the field may reduce his cost by as much as 30, or even 40, percent.

When a taxidermist examines a trophy brought to him for mounting, he notes things that will add to labor and material costs over and above the minimum he must charge for mounting a properly handled trophy. Carelessness on the part of the sportsman might add several dollars to "the minimum" price.

For example: If a deer has been torn from being dragged over rough ground, or if it is dirty and bloodstained; if a fish has dried out and shows split fins and tail, or has scales missing, it will cost more to have the blunders corrected or hidden than would be the case if care had been taken when the trophy was killed.

If you want to economize on the cost of having your trophy mounted, do not drag it over rough ground but carry it carefully out of the woods.

A common sin on the part of hunters and fishermen is to hold fish or game too long before taking it to the taxidermist. The first signs of decay indicate the possibility of spoilage of a good trophy, often beyond hope of satisfactory mounting.

A taxidermist is definitely sympathetic toward every sportsman. He knows that if the hunter or fisherman did not value his trophy highly, he would not make even a too late attempt to have it preserved for display. Also, as a matter of good business policy, he wants to quote prices as low as possible.

The following suggestions will assist sincere trophy collectors in buying taxidermy services at the least possible cost. The listed items are no more than common sense. Just remember that careless handling in the field will increase the cost of mounting, and, conversely, care will reduce the cost so that it may be within the amount you can afford to pay.

Don't handle trophies roughly. Don't slash a fish with your gaff—slip the point into the gill slit and lift; don't drag it over the gunwale. Don't pull feathers from your bird. If you pick it up before it is dead, slip a thin knife blade into the beak opening and puncture the brain with a deep, sure stroke.

Don't use a club to kill a small animal, or bash its head against the nearest tree or boulder. Use an extra bullet, placing it where the entrance and exit holes will not show when the creature is mounted.

Don't drag a deer over sharp rocks or snags. Try to keep the head and shoulders high off the ground so as not to chafe or tear the hair and hide. Don't leave a deer in the hot trunk of a car longer than necessary, or if you carry it lashed to your fender, tie it very securely so as not to bruise it every time the car bounces.

Don't let your fish dry out. Wrap it in wet cloth or paper and keep it wet until you can freeze it. Freezing is not necessary if you keep it wet and get it to the taxidermist the same day it is caught. Try especially not to let the fins and tail stiffen from dryness.

Don't carry small animals by their tails. Tail skin is thin and tender. A tail with bare spots makes an ugly mount. If the taxidermist must provide a false tail (from another specimen), you can bet it will cost you extra.

Don't cut the head from a fish too short if you intend only a head mount. In such a case, keep the head wet and handle as you would a whole fish. Similarly, don't cut a deer head above the foreleg line. Peel the neck skin back as if you were removing a sock. If it is too short, it will make it impossible to make a shoulder mount or even a standard length neck mount.

Don't slash your hunting knife crosswise of the hair if you feel you must cut your deer's throat to bleed it. Make your cut "with the grain" of the hair and don't cut a

To save money have your trophy mounted in a conventional position. Flying birds, leaping fish, and other action postures cost a lot more.

single one if you can avoid it. (If you field dress your deer where it dropped by opening the body cavity, the need of bleeding from a throat slash is questionable.) Don't cut through the neck skin when you peel it back to get the meat.

Don't field dress (gut) fish, birds or small animals. Leave that for the taxidermist. If you want the meat for your table, the taxidermist usually will save it for you without extra charge, and freeze it until you call for it.

Don't expect the taxidermist to accept decayed or partially decayed trophies for mounting. Fish scales, bird feathers, hair and fur will begin to loosen and even begin to drop out within a few hours of the time a trophy is killed. These cannot be replaced without great effort, and hence added expense. Try to take your kill to be mounted on the same day it was killed. If this is not possible, handle it gently and freeze it to keep it in as nearly perfect condition as you can.

Don't leave your deer hanging after field dressing unless it can be hung under cover or in deep shade. If you are going to have a commercial outfit skin and freeze it for you, have them freeze the head also if you cannot get it to your taxidermist right away.

Don't be trapped into having a little spike horn or forkhorn mounted unless you have money to blow. A taxidermist must charge almost as much as he would for an 8- or 10-point buck.

Don't expect to have your trophy mounted in other than a simple "standard" position without extra charge. Fish mounted in leaping or fighting position, birds with spread wings, small animals in reared posture, as well as "shoulder" or "sneak" mounted deer heads cost more because of the extra materials and labor involved. If you must exercise maximum economy, be satisfied with the taxidermist's minimum standards. Discuss this with him if you are short of funds.

Don't expect a real trophy mount from an unprime pelt, or from a moulting bird. Although they can be stuffed, they are likely to look ragged and probably will not make a trophy you can display with pride.

Don't expect a fish to look 100 percent lifelike after mounting as far as color is concerned. Fish lose their original brilliant colors almost immediately after being taken from the water. The taxidermist must spend a lot of time and exercise a high degree of artistic talent to make a mounted fish look reasonably natural. A "super" job is likely to be very expensive.

Do hold or hang a bird by its legs until the blood and body fluids have drained completely. Then wrap carefully in a piece of cloth or paper to hold the feathers in place and prevent soiling. Freeze it as soon as possible if you cannot get it to your taxidermist at once. The same applies to small game. In both cases, wash or wipe blood and stains from fur or feathers before you freeze it. Need of cleaning is one of the things a taxidermist considers when he quotes a price for mounting.

(Continued on next page)

Good taxidermy requires time and careful work, and repairs such as replacement of feathers or scales add to the time and the cost. Here taxidermist Arthur B. Fuller puts the finishing touches on an especially fine mounted gobbler.

TO A SPORTSMAN

Let me live, O Mighty Master,
Such a life as man should know,
Testing triumph and disaster,
Joy—and not too much of woe.

Let me run the gamut over;
Let me fight and love and laugh,
And when I'm beneath the clover,
Let this be my epitaph:—

"Here lies one who took his chances
In the busy world of men.
Battled luck and circumstances,
Fought and fell and fought again.

Won sometimes, but did no crowing,
Lost sometimes, but did not wail.
Took his beating, kept on going,
Never let his courage fail.

He was fallible and human,
Therefore loved and understood
Both his fellow men and women
Whether good or not so good.

Kept his spirits undiminished;
Never false to any friend;
Played the game until it finished
Lived a sportsman to the end."

—*Author Unknown*

Contributed by C. R. Willey
State Entomologist, Richmond

Outlaw Roundup On Little Creek

ON November 13, 1964, game managers and state game wardens were successful in apprehending a group of deer poachers who were illegally attempting to kill deer at night. The scene of the violation was on Little Creek in Bland County, Virginia, on the Wythe Ranger District of the Jefferson National Forest.

State Game Commission officials, Miller C. Meadows, G. Tom Burton, Donald McLeod, Bill Jamison, Robert Mitchell, Wayne Richardson, Ed Moore, and Wayne Marshall, had been working vigilantly to apprehend poachers throughout their area. Many weeks of hard, persistent work plus numerous sleepless cold nights of stake out finally paid off.

Friday, the 13th, the officers had spotted themselves at strategic locations in the area. Every possible vantage point was manned. Entrance and exit roads into the area were ready to be sealed closed as soon as trouble broke out. The officers waited and listened in the darkness of the forest, poised and ready to spring. Portable two-way radio communication was maintained to insure a smooth operation. At 10:00 p.m. the officers saw a deer spotlighted in a field; then the shoot started and Game Manager Meadows and Warden Mitchell were the first on the scene. Within five minutes all the rest of the officers were at the spot.

Surprised in the swiftness of the appearance of the officials, the violators did not even have time to dispose of their weapons, although an attempt was made by one of the violators to hide a rifle under the car. Arrested at the scene were three adults and one juvenile, son of one of the men. One of those arrested also had his wife and two infant children at the scene. Those arrested were taken to Bland County jail where one spent the night while three posted bond and were released pending trial.

The four were found guilty and fined $150 each. Their 1959 Chevrolet car and 1956 pickup truck and all their weapons, estimated value $600, including three high powered rifles, an automatic shotgun and two small bore rifles, were all forfeited. Game Warden McLeod mentioned that the four pleaded not guilty and said they were hunting bobcats and "coon"—(with high powered rifles?). One of the rifles had a light attached to it to aid the shooter to see the sights. Mitchell and Meadows saw deer in the field at the time of the shooting. Investigation did not reveal that the deer were hit by the shooting.

Warden Richardson said that they did not have any trouble with the violators except for some embarrassing problems which developed when the violators realized the graveness of the situation. What kind of a man would bring himself to such an unsportsman-like act, and also bring his family out to be involved, and teach his son such behavior?

The officials estimated that spotlighting had been going on in their area early in October. Apprehension of night poachers requires a great deal of work and, as in hunting game, the law enforcement officials have to be at the right place at the right time. Public cooperation in these matters can make the job easier and more successful.

The law says, "Any person who kills or attempts to kill any deer or elk between a half hour after sunset on any day and a half hour before sunrise the following day by use of a light attached to any vehicle or a spotlight or flashlight shall be guilty of a misdemeanor and shall be punished by a fine of not less than fifty dollars nor more than two hundred and fifty dollars or by confinement in jail for not less than thirty days nor more than sixty days, either or both. The flashing of a light attached to any vehicle or a spotlight or flashlight from any vehicle between a half hour after sunset on any day and a half hour before sunrise the following day by any person or persons, then in possession of a rifle, shotgun, crossbow, or bow and arrow or speargun, without good cause, shall raise a presumption of an attempt to kill deer or elk in violation of this section. Every person in or on any such vehicle shall be deemed a principal in the second degree and subject to the same punishment as a principal in the first degree."

"Every vehicle, rifle, shotgun, crossbow, bow and arrow, or speargun used with the knowledge or consent of the owner or lienholder thereof, in killing or attempting to kill deer or elk between a half hour after sunset on any day and a half hour before sunrise the following day, in violation of (previously quoted law), and every vehicle used in the transportation of the carcass, or any part thereof, of a deer or elk so killed shall be forfeited to the Commonwealth, and upon being condemned as forfeited . . . the proceeds of sale shall be disposed of according to law."

In some states violators lose their hunting privileges for as long as three years. Maybe this state should adopt such a policy. The persons apprehended in the above mentioned situation were allowed to (and did) hunt during the following deer season.

For the Thrifty Collector (Continued from page 19)

Do be prepared to make an advance payment when you leave your trophy for mounting. Ordinarily, this advance covers only the taxidermist's cost of initial labor (such as skinning) and materials for the finished job. In many parts of the country, a "deposit" of about half the estimated final cost is customary.

Do expect the taxidermist to respect fish and game laws. In many states (Virginia is one of them), a taxidermist must be licensed to practice his skills and is subject to rigid regulations. If a trophy is brought to him during a "closed season," he cannot accept it unless you are prepared to certify that it has been taken legally. If there is any question in your mind concerning the legality of a planned hunt, discuss it with your local game warden before you go. He will be happy to advise you.

Do expect to pay a bonus or premium price for priority services. The taxidermist normally must complete work on a first-come, first-served basis, and so cannot usually put your work ahead of that of a prior customer. It is not unusual for a taxidermist to need six, nine, or even 12 months to complete a good trophy mount. This is because many steps are involved, such as skinning, tanning, drying, painting, retouching, and final cleaning.

Do observe the foregoing suggestions if you are hampered with low-budget operations. They will save you many dollars in the long run.

ONE SHOT

By JAMES R. FAZIO
Sula, Montana

NOVEMBER has an air of expectancy equaled only by the Christmas season. Guns and hunting are the topics of nearly every conversation, and long planned for hunting trips are about to become a reality.

A few years ago the enchanted month was welcomed in by George Ebert and his young son Danny. It was Danny's first season, and they had painstakingly prepared for it.

They had studied deer tracks and browse conditions, and thoroughly knew the country they planned to hunt. Danny had read the latest hunters' almanacs, and had completed a hunter safety course. Rifles were carefully cleaned and sighted in, and everything was ready for the big day.

It arrived as a cold crisp morning with some fresh snow in the mountains. Mrs. Ebert had a big lunch packed for the two hunters, and adjusted Danny's new red cap as she saw them out the door. She knew Danny was old enough now, and she knew he would be a good hunter like his dad. Still, she couldn't help but wish it were a few years away.

Lunch time came and was past and not a deer to be found. There were more hunters than usual, and although there were plenty of tracks and sign, hope of a first-day bag was rapidly fading.

At four o'clock George and Danny headed back to the car. As they started down the ridge towards the road, Danny was several hundred yards ahead of his father, and just out of sight.

Suddenly George heard a shot. His first thought was that Danny had stumbled onto a deer. Running over the rise above the road, an ice-cold chill jolted through his body.

There in front of him was Danny, the snow around him crimson, and his little body writhing in pain.

George uttered a low cry as he ran to his son and fell to his knees in the red snow. He caught a movement in the corner of his eye and glanced down the road some three hundred yards away. A car door shut and the engine of a late-model sedan was gunned to a start. Before he could think, the car was out of sight and he was again alone.

George lifted his boy as gently as he could. The new cap fell into the blood splashed snow and tears burned his eyes.

Danny's first hunt was his last. From the moment a careless stranger shot at a movement on the hill, Danny would never walk another step. He would dream of many, many hunts, but they would all be from a wheelchair, and all in the world of imagination.

This story is based on an actual tragedy of a few years ago. Mr. Hunter, don't forget for one moment that your gun has the power to kill or maim a fellow hunter. Remember, too, that one shot from your gun can change the course of someone's life—and yours.

Tips for Campers (Continued from page 11)

in about 3 minutes. A new 6-man model, called the Storm King, is a roomy 9′ x 12′ x 6′6″ model that weighs only 33 pounds complete and folds into a 39″ x 13″ case. These tents will withstand high winds without the use of stakes or guys. I have slept in mine in 60 mph winds.

Be not misled by manufacturers' designations of tent capacity. A two-man tent will sleep two men and a six man tent will sleep six good friends, who don't snore, but they're not for *living* two or six men. My two-maner is great for me and my gear; I can even cook in it in foul weather. The six-man job is about right for three campers with gear. Moral: don't skimp on room when buying a tent. Don't skimp on price either. You get what you pay for and a good tent, properly cared for, will last a long, long time.

Another type of often overlooked tent is the Baker or lean-to style, especially useful for the go-light hunter-camper, or where price of equipment is a major consideration. The open front Baker can be warmed easily by a wood fire built a few feet outside the tent and with a log reflector erected behind the fire. Aluminum foil facing in front of the logs makes this arrangement even more efficient and helps prolong the life of the reflector logs. The sleeper will have to arise a couple of times during the night to put on a little more fuel. This can be facilitated by piling a supply of wood within arm's reach where it can be rolled onto the fire without the necessity of coming out of the sack.

Sleeping bags can be another trap for the unwary and unsuspecting camper. Extravagant claims are made for bags of the sleaziest material and poorest workmanship. Buy only new, duck down filled bags—if you can afford them. Second choice goes to virgin polyester fibers, such as Dacron "88." Don't fall for the proprietary names too numerous to mention which indicate nothing as to what you are actually getting. About 4 pounds of Dacron "88" or 3 pounds of duck down filling are right for average temperatures during Virginia's hunting season, depending a great deal on personal preference. A shoulder hood of the same filling material will increase bag warmth and comfort to a considerable degree. In severe weather wear quilted insulated underwear as pajamas and quilted bootees. This insulated underwear is strictly for the duck blinds as far as hunting is concerned, being much too warm for active movement, but it's great for warm sleeping.

And, speaking of quilting: make sure your sleeping bag has plenty of quilting to hold the filling in place and prevent its matting or bunching. If all the filling goes to one spot in your bag, you'll be cold no matter how many pounds of filling there are. Zippered openings should be sealed with insulated weather flaps, too. One of the coldest nights I ever spent was on New River in September in a high-priced sleeping bag that lacked these flaps under the zipper. The cold seeped in like river water until I finally rolled the edges of the bag under to lock out the chill.

Another tip: if you use an air mattress, carry along an extra blanket or two to fold and place between the bag and mattress. Even several layers of newspapers will help if you forget the blankets. In any event some insulation is needed at this spot as the air picks up ambient air temperature and transmits it to the sleeping bag. If your car is handy, one of the new electric pumps is a time and work saver for inflating air mattresses; takes about 2 minutes.

(Continued on next page)

Tips for Campers (Continued from page 21)

For cooking you may either use your campfire or the more convenient and reliable Coleman stove. Coleman has recently brought out a new Toaster-Broiler-Griddle that will take care of all camp cooking chores except stewing and baking. The big flat cooking surface lets you fry bacon or sausage, make the coffee and cook flapjacks or toast bread all at the same time. The broiler feature gives a fine, "charcoal" flavor to steaks and chops and hamburgers. For auxiliary cooking, when the two burners of the Coleman aren't enough for using the folding oven, broiling meat and stewing vegetables and making coffee all at the same time, we are trying a new stove this season. This is Gloy's Cook-Pal, an alcohol burner that will boil a quart of 50 degree water in seven minutes over its hot, controllable, blue flame. This one gives the hottest yet best controlled flame of any alcohol stove I have ever used.

If you're familiar with those handy pocket hand warmers, the kind you put lighter fluid in and touch a match to to keep your hands warm all day, you may be surprised to know that they have grown up into full-sized space heaters that will warm a tent or trailer, a duck blind or even a deer stand. And they do it safely without flame, poisonous fumes or odor. They're called catalytic heaters since they operate by the action of a platinum catalyst on the fuel in the tank rather than by flame temperature heat. Amount of heat output depends upon size and price; varies from about 2000 B.t.u. to 12,000 B.t.u. The 5000 B.t.u. size will keep a 10′ x 12′ tent comfortable for sleeping; burns 18-20 hours on three quarts of white gasoline or stove and lantern fuel. Smaller sizes used in conjunction with a tarp or blanket drape will keep you warm on deer stand or in duck blind. Not bad in a football stadium either.

I once killed a big buck very late in the afternoon. This was on what is now the Gathright Wildlife Management Area in Bath County, when I was game manager and club secretary for the then Hickory Lodge Hunt Club, owned by T. M. Gathright, Sr.

I had warned the folks at the Lodge not to worry if I didn't come in. I didn't. By the time that big deer was field dressed it was too dark to try and wrestle him out of the woods. We slept together (well, almost) through the night. I was quite comfortable considering the circumstances and the below-freezing temperatures.

I cleared away the forest litter for a considerable space, dug a hip hole in the soft soil and built a small fire therein. A larger fire was built nearby. While fresh deer liver broiled over the campfire, the other fire was burning merrily; warming the ground on which I planned to sleep. The small aluminum pan in my pack, a packet of tea, and water from the bottle I carried made tea. It was an adequate meal. Today I also carry the concentrated food bars called Nu-V.

When the fire in the hip hole had died down after an hour or so, I scraped out the embers, covered the area with pine tags and built up the other fire. I slept well, awaking only twice to replenish the fuel.

Next morning I returned to the Lodge—downhill all the way—dragging the buck behind me on an improvised travois that kept the hide and the meat in good shape and safe from bruises.

Like I said, cold weather camping can be fun if you know a little and try to learn a lot.

I hope these few tips will make cold weather camping more fun for you.

Sustained Deer Yield Management

(Continued from page 6)

30,000 deer, it obviously is unnecessary any longer to allow a single individual more than one deer annually. The restriction of the deer bag limit to a single deer would insure a more even distribution of the limited supply, while herd control can be accomplished adequately by varying the number of days during which doe deer may be harvested.

Deer Hunting Dates

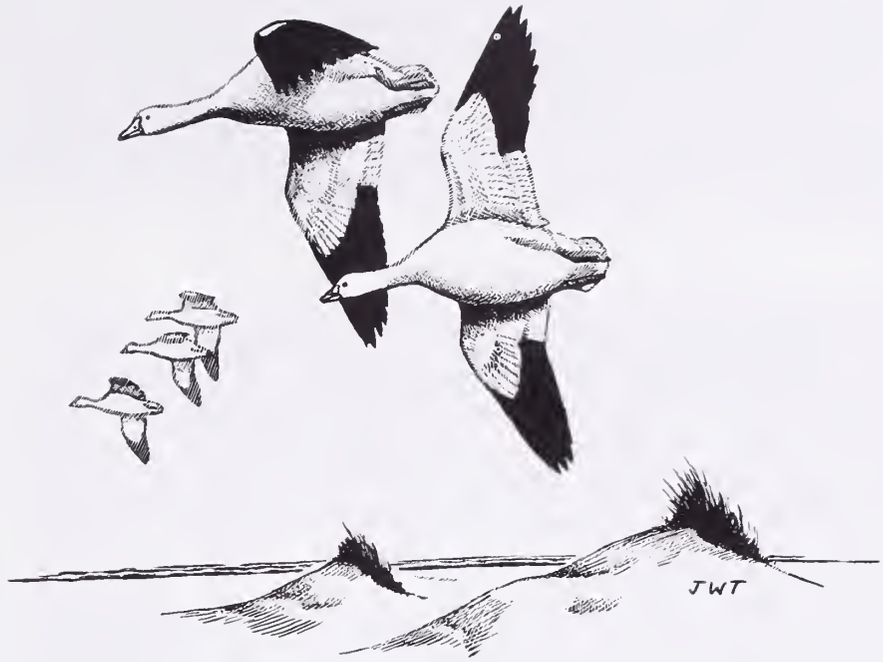
Not all men who enjoy the sport of hunting wild deer have equal time with which to indulge in this oftentimes favorite pastime. A long season allows those individuals who can spend nearly every day deer hunting a disproportionate chance at making their kill. A shorter season reduces the discrimination against the sportsman who cannot afford the time or the money to hunt deer over a long period of time. A short season also decreases the tendency toward bag limit violation that often occurs during a long, lenient season. A shorter season also would reduce the period of harassment by dogs, which is often considerable in heavily hunted regions of the state.

Since studies of deer breeding dates in Virginia have determined that the peak of the breeding season occurs during the latter half of November, it is wise to wait until the third Monday of November before legalizing deer hunting. Two factors govern this date as the best opening date for deer hunting state-wide. The first is the fact that west of the Blue Ridge hunting weather grows more severe each week following the third Monday in November. A delay of the deer season until December would result in considerably increased chances of snow, reduced hunter access, and an unsuccessful season. The second factor governing the third Monday in November as the best opening date for state-wide deer hunting is that if the western season were to open on the third Monday and the eastern season remained closed until later, the concentration of hunter pressure caused by eastern hunters going west to hunt would be formidable.

Studies and observation have indicated that buck antlers start to drop around the middle of December. December 15 is also the date that small deer embryos begin to take shape and cause some concern to sportsmen who dislike harvesting pregnant game. Thus, from the third Monday of November through the first full week in December would be logical dates for deer hunting in Virginia. Since a very high percentage of deer now are taken during the first two and the last one week of the long eastern season, such a long season obviously is not necessary to insure an adequate harvest. It invites bag limit violation, permits continued deer herd harassment by dogs, and favors only a relatively few individuals who happen to be able to take full advantage of the number of hunting days provided.

Our deer management goal is to provide optimum and sustained numbers of deer for maximum public enjoyment. To reach this goal state-wide we will have to regulate our populations and our harvests in Tidewater and the Piedmont with the same precision as that which we are now capable of demonstrating only in our western areas. To achieve this precision in management will require a state-wide bag limit of one deer; maximum season lengths of two and three weeks; and the accomplishment of herd control by varying the number of days in which doe deer may be killed in each of six logical deer management regions.

Bird of the Month:



Greater Snow Goose

By DR. J. J. MURRAY
Lexington

NO waterfowl is more handsome than the snow goose. The wood duck has more color, the little bufflehead more contrast, but the white snow goose with sharply contrasting black wing tips is more striking.

A photograph taken at Back Bay in January, 1951, shows a flock of 25,436 of these birds in the air. That is probably more than a fourth of the whole population of this subspecies. Back Bay seems to have in most winters the greatest concentration of these lovely creatures to be found anywhere. We have counts there as high as 60,000 in 1957-58, and 65,000 at Christmas, 1964. On the other hand, Major Allan Brooks said of the smaller race, the lesser snow goose, that it was probably the most abundant goose in North America. The greater snow goose, some 30 to 38 inches in length, is a third larger than its western relative.

The breeding range of our greater snow goose is somewhat circumscribed to northwest Greenland and northern Baffin and adjacent islands, while the winter range is limited to the Atlantic coast from New Jersey to North Carolina. The lesser snow goose has a much wider breeding territory, across the continent, and a much wider winter territory in much of the western United States.

The snow goose is a gross feeder, apparently always hungry. It eats quantities of grass and sedges, feeding particularly on the roots but also eating the green shoots. Marsh grass, salt grass, and rushes are consumed. The birds are said to feed principally during the early hours of the day and in late afternoon. The diet is practically one hundred percent vegetable. They also take in quantities of gravel, to help in the maceration of the vegetable matter.

Our eastern variety of the snow goose reaches its breeding grounds in northern Baffin Island about the first of June. Within two weeks it has eggs in the nest. A recent publication of the Fish and Wildlife Service, *Waterfowl Tomorrow*, states that the breeding snow geese favor the valley banks along streams. Many nest in small isolated colonies, while the nesting of the western variety is apt to be more concentrated. After laying four eggs on the average, although fewer in delayed nests, incubation begins. It takes a few days over three weeks for the eggs to hatch. There is still snow around the landscape when the first geese begin to nest, with temperatures below freezing at night. But the young, with their thick down, can stand very low temperatures.

The writer of the chapter in *Waterfowl Tomorrow* is of personal interest to me. Back in 1953 a flock of lesser snow geese landed at the Lexington golf course. One of them was soon killed by some predator. A leg with a band on it was given to me. When I sent it in to the Fish and Wildlife Service, I was told that it had been put on by F. G. Cooch, the man who wrote this chapter, at Southampton Island less than two months before.

Edited by HARRY GILLAM

Philpott Trout

Martinsville Bulletin photo by Remsen

Stanley Clark of Martinsville, left, holds a fine string of Philpott Reservoir rainbows taken by trolling. The catch weighed 15 pounds with the largest tipping the scales at 4½ pounds. Jimmy Cannoy, right, also of Martinsville, hefts a 6½ and a 3½ pounder taken from the reservoir. Rainbow fry stocked by the Game Commission during the past several years have been responsible for these catches. Lake trout have also been stocked recently to see if they will grow even larger than these rainbows in the lake's cool depths.

Conservation Fellowships

The National Wildlife Federation is seeking applications for Graduate Fellowships in the field of conservation to finance research in resource management, conservation education, journalism, radio and television, landowner sportsmen relations or related fields. Assistance up to $500 for Master's Degree candidates and up to $1,000 for Doctorate Degree candidates is available under the program. This program is backed in Virginia by the local Wildlife Federation affiliate, the Virginia Wildlife Federation. Interested persons may obtain application blanks from the Executive Director, National Wildlife Federation, 1412 Sixteenth Street, N. W., Washington, D. C. 20036.

Silt Is Most Serious Pollutant

Erosion of silt into Virginia's rivers is a serious problem confronting biologists in Tidewater Virginia, according to Dr. Morris L. Brehmer, Head, Ecology Pollution Department, Virginia Institute of Marine Science.

"Much of the silt muddying our rivers today comes from road construction, urban development and similar construction projects where large areas of land are laid bare for an extended period of time," Dr. Brehmer said. "It also produces shoals and fills navigation channels necessitating periodic dredging. It covers beaches and reduces their value for recreation. It makes the water distasteful for swimming and water-skiing. It is an insidious killer of aquatic animals and plants."

"Silt in estuarine waters harms marine life," he reported. "It destroys oyster grounds and it reduces food supplies for animals by limiting algae and destroying bottom living animals. It may even kill fish directly through mechanical clogging of the gills or indirectly by destroying lesser organisms on which they feed."

"Agricultural people have made great strides in preventing soil loss to streams through education and sound management practices such as contour farming, grass waterways and reforestation," Brehmer reminded the conservationists, "but we must stress that everyone who breaks the soil has a responsibility to prevent its eroding into streams."

Wilderness Guide

Interested in exploring some of America's wilderness? If so, a new wilderness guide, "Off on the Right Foot," published by the Wilderness Society will be a big help in organizing and planning such a trip. It tells where wilderness areas are located, gives tips on planning a trip including equipment and techniques, and includes rules for proper wilderness use and safety. It is available free from the Wilderness Society, 729 Fifteenth Street, N. W., Washington, D. C. 20005.

Edited by DOROTHY ALLEN

Dove Hunter

Collin Smither, age 13, Kilmarnock, shot his limit of doves in Lancaster County in an hour and a half on opening day with his 20-gauge shotgun. Collin used 28 shells to get his limit. His father, who had used 25 shells and had only seven doves, continued to hunt.

Making Friends

Photo by William M. Rhoden, Jr., Berryville
Elizabeth Myer, age 2, makes friends with a fawn at the Game Commission exhibit at Clarke County Ruritan Fair during the week of August 23. Elizabeth is the daughter of Dr. and Mrs. Eric Myer of Boyce.

Hobby Is Trees

F.F.A.'s Conservation Work Wins State Award

The C. T. Smith High School F.F.A. Chapter of Caroline County was recently selected as the State winner of the Wildlife Conservation Award by the Virginia Association of F.F.A. In recognition of its accomplishments in the conservation of wildlife, the chapter was presented a cash award of $40 and a State plaque.

Under the leadership of W. B. Coleman, local vocational agriculture teacher, and the F.F.A. president, Lee Young, Jr., 40 members planted wildlife borders. They devoted 660 hours of self labor in preparing the wildlife food patches and in providing feed for game during the winter snows. Also, seed mixtures were distributed to local farmers to grow wildlife patches.

Of the 71 members in the C. T. Smith F.F.A. Chapter 60 completed one or more improved practices in wildlife conservation on their home farms.

Chapter members conducted an active public relations program to stress the importance of better conservation of wildlife. They prepared educational exhibits, presented programs for local civic and educational groups, and prepared demonstration plots. Newspapers, magazines, and radio were used as a part of their program to encourage better conservation practices.

Area winners in the State contest were: Appalachian Area, Clintwood; Blue Ridge Area, Riner; Central Area, C. T. Smith; Eastern Area, Northumberland; Northern Area, Montevideo; and Southside Area, Appomattox.

—*L. M. Jewell, Jr.*, Asst. Supv.
Vocational Agriculture
State Board of Education

Pictured left: Eight-year-old Bobby Schwab has a special interest in nature. He learned to identify thirty different trees during his vacation from school this past summer and he plans to learn more about trees this winter. Bobby's father, who is a member of the Arlington-Fairfax I.W.L.A. Chapter, and Dr. G. B. Farrar, who takes a special interest in teaching boys and girls conservation, helped Bobby learn the different trees.

Dabney Allen, C. T. Smith FFA member, surveys a wildlife feed area established on his home farm.

Mark Coghill, C. T. Smith FFA member, is feeding quail raised for release.

W. B. Coleman, Vocational Agriculture Instructor, and Mark Coghill, FFA member, check Mark's wildlife feed area.

Edited by JIM KERRICK

Camouflaging is always a problem with brightly painted motors, but most manufacturers now offer dull finished models.

Using natural foliage from the area, hunters can camouflage the blind and boat from the sight of the wary quacker. Only one problem remains for the hunter. Can he shoot straight?

Courtesy of Evinrude Motors

Did You Know?

Between 47 and 50 million men, women and children fished at least once during the past year, and they purchased tackle with a retail value of $346,000,000.

More than 10,000,000 acres of new boating-fishing waters will be created within the next 10 years by new impoundments, according to the government's Outdoor Recreation Resources Review Commission.

Forty-four percent of the U. S. population prefers water-based recreational activities and this trend is ever increasing.

Boat, Motor: Key to Better Hunting

Almost every serious duck hunter can relate a story about a rapid firing "sky blaster." He's an all too familiar breed —long on ammunition and short on common sense.

The "sky blaster" usually draws a bead on high-flying prey that couldn't be hit with a small-bore cannon. Fortunately he's no threat to the ducks, but will ruin the sport for others in the area.

Many hunters have found that the "blaster" is easily avoided, thanks to an outboard boat and motor. Our rapid firing friend usually picks the most convenient place for his antics.

Besides transportation for the hunters, the outboard rig can be used to haul equipment, including wooden framework for a portable duck blind. Decoys can be placed exactly where the hunter wants them, and downed birds are no problem to retrieve.

COMMONWEALTH OF VIRGINIA
GOVERNOR'S OFFICE
RICHMOND

ALBERTIS S HARRISON, JR
GOVERNOR

VIRGINIA NATURAL RESOURCES CONSERVATION WEEK

Virginia's rich endowment of natural resources, fertile soil, ample water, abundant forest, and rich wildlife, are essential to the economic and social well being of this State.

In their preservation, we owe a debt to individual land owners, to soil and water conservation districts, and to the agencies to whom conservation is a continuing obligation.

In concert, their members observe Natural Resources Conservation Week, October 31 - November 6, and I am delighted once again to call this observance to the attention of all our people.

A. S. Harrison Jr.
Governor

Commission color photo by Kestelo